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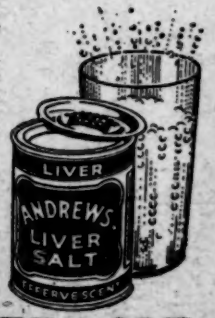

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BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 27 1943

THREE SKIN DISEASES IN WARTIME*

BY

HENRY MacCORMAC, C.B.E., M.D., F.R.C.P.

Physician for Diseases of the Skin, Middlesex Hospital

Dermatologists are supposed to be fortunate because they are not called out of bed at night, and because their patients never get well and never die. I have deliberately prefaced my observations with this cynicism since it embodies the germ of a widespread belief in the chronicity and rebellious nature of skin diseases—a belief I desire at once to challenge and to traverse by saying, first, that the majority of skin diseases are characterized by their satisfactory response to treatment provided the established therapeutic principles are followed; and, secondly, that although patients rarely die, the disability—for example, from eczema—has a formidable economic significance: the afflicted individual cannot work, and becomes a liability rather than an asset to the community, and this is particularly true of industrial dermatitis under the present condition of intensive endeavour. In the last war, as Prof. McNee pointed out, 90% of all the sickness in one army resulted from the effects of skin diseases, especially scabies and pediculosis. History repeats itself. It is therefore an important part of our national service to set up a programme with the object of preventing or limiting, so far as we can, a similar wastage of man-power in civil as well as in military life.

I can here only profitably review a very limited cross-section of a large subject, but this will represent the hard core, leaving out the less important, perhaps even ornamental, framework. I have ventured to choose scabies, impetigo, and eczema as a representative group. Scabies and impetigo, as I fully realize, have recently been very widely discussed. The present occasion may nevertheless, and for that reason, be a suitable one to sum up.

Scabies

Note that in scabies the incubation period may be as long as two months: this explains the apparent freedom of the sleeping partner even six or seven weeks after intimate contact. The eruption on the anterior axillary folds and the abdomen consists of scratched papules; on the fingers and wrists occasional vesicles with the characteristic burrow, from which, with practice, the mite can be extracted. In the adult male, papules and impetiginous lesions on the penis provide invaluable confirmatory signs—the means of settling at once the diagnosis in many doubtful cases. The presence of grouped impetigo on the lower buttocks is equally reliable as positive evidence of scabies, especially where the characteristic scabietic eruption is insufficiently or irregularly developed elsewhere. The diagnosis of scabies may be very easy or very difficult. Recognition of its prevalence with a sharp look-out for its presence, even in the most unexpected quarters, will best serve as a means of detection. The deceptive qualities of the disease were well illustrated recently in an in-patient who had typical and almost universal eczema. The routine examination revealed one burrow on the web between the fingers, from which a living acarus was removed. Here treatment had of necessity to be tempered to the superimposed eczema: this case is mentioned not for this reason, but because it illustrates the importance of a detailed examination even where the diagnosis appears established beyond doubt upon a more superficial survey.

Treatment.—The treatment of scabies as a war measure has been standardized as follows: A hot bath, with soaping, is followed by the application of 25% benzyl benzoate emulsion all over below the neck; the benzyl benzoate is applied again—that is, two applications in all—either on the next day or one week later. To obtain uniformly good results it is important to follow this procedure and this method exactly, no more and no less, and to use the agreed concentration of benzyl benzoate, thus avoiding the pitfalls of over-treatment or under-treatment by one of the many alternative procedures, which, except sulphur ointment, have proved under careful testing to be incompetent in varying degrees. On the question of disinfestation of contact garments and bedding I shall find myself at variance with the view that this is unnecessary. Reinfection, I submit, may occur either from other persons in the household, especially the sleeping partner, or from garments and bedding: any complete scheme should therefore exclude reinfection from both these sources, and in this belief I am fortified by, as it seems to me, the minor epidemic occurring among fire-watching parties through communal blankets.

Impetigo

As in the case of scabies, war conditions have revived in epidemic form another parasitic disease—impetigo contagiosa. I am confident that the clinical manifestations of this complaint have become considerably modified during the last two or three decades, the eruption having changed from the delicate circinate blisters and very superficial crusted patches to a much more polymorphic and refractory reaction. Earlier observations seemed to establish a streptococcal invasion of the skin as the causal agency, but it has recently been shown that a staphylococcus may also, and equally, be the causal organism, and there are even some who profess to be able to recognize differences in the clinical picture resulting from each type of infection. Be that as it may, it is at least possible that this alternative parasitology accounts for the greater variation in the clinical appearance. For some curious reason this seems to apply only to impetigo of the facial region. The secondary impetigo of the body and limbs, such as that met with in association with scabies, still breeds true to form.

Treatment.—If impetigo has thus become complicated, its treatment has undergone a remarkable simplification since the introduction and use of sulphathiazole gr. 25 in zinc paste 1 oz.: by some a water-miscible cream as a vehicle is considered superior. The remedy should not be applied for more than six days—first, because by then it has either proved or disproved its suitability; and, secondly, because by prolonged use or inadequate dosage a drug-resistant species of the micro-organism may be created. The alternative treatment relies on ammoniated mercury gr. 10 in zinc paste 1 oz., which should

* A British Medical Association Lecture given to the Exeter Division at the Royal Devon and Exeter Hospital.

in any case be prescribed for impetigo on the body and limbs. Where the impetigo develops on the face in rings or circles with a superficial raw surface or "stuck-on" crust, diagnosis is easy and straightforward. An infected or impetiginized seborrhoeic eczema also attacks the face, and it is then very difficult to distinguish it from the variety of impetigo with multiple small lesions. An infected eczema is much more symmetrical, the eyebrows may be simultaneously involved, and as a rule the eruption tends to be confluent, in contrast to the areas of healthy skin between the infected regions which are observed in impetigo. When in doubt treatment by dabbing the face with 1 in 2,000 perchloride of mercury lotion, followed by oily calamine lotion, is usually an efficient compromise.

Eczema

For my third and last subject I have chosen eczema because it is always with us, because it has become increasingly prevalent during the war, and because it provides a major problem in the recognition and treatment of industrial dermatitis. Thrice armed indeed is he who is familiar with the diagnosis, prognosis, and treatment of this, the commonest and most troublesome skin disorder. I have deliberately used the word "disorder" instead of "disease," as this glosses over the differences of opinion of those who on the one hand regard eczema as a specific entity and on the other as a cutaneous reaction provoked by a variety of different internal and external agents. In eczema the minute changes in the skin determine the objective phenomena and also show us how the different clinical varieties are connected. The earliest changes occur in the dermis in the form of dilatation of the papillary and subpapillary blood vessels with exudation of serum. This results in a congestive erythema seen as redness of the skin, most pronounced in eczema rubrum. The serous exudation accounts for the swelling observed in certain acute types of the disease, especially the form affecting the face and genitals. The exudate has further and important effects; for the fluid invades the epidermis separating the prickle cells, and at a certain point the pressure of this fluid ruptures the intercellular filaments, producing tiny cavities filled with serum, constituting the vesicles—the most important and characteristic element of the multiform eruption. If the discharge of serum is considerable a weeping surface is observed; or the coagulated serum may form crusts; or secondary infection may occur; or where an imperfect attempt is made to reproduce the horny surface, squamae or scales develop. All these changes occur in every case of eczema, but in different degrees, thus constituting the different clinical varieties. To attempt to explain these complicated dermo-epidermic reactions would require a chapter in humoral and cellular pathology far beyond the scope of this address and my own competence. We are, however, entitled to assume as a working hypothesis that in every eczematous eruption both an endogenous and an exogenous factor exist, but in such disproportionate degrees as to require us to classify some cases as examples of endogenous and others as examples of exogenous dermatitis. Or, in the descriptive terms of the patient, either the blood or the skin is at fault, or both. This hypothesis does not require confirmation by laboratory methods; observation of the patient and his reactions provides all the evidence necessary for proof. This leads me to suggest that the modern tendency relies too much on the guinea-pig and the test-tube and too little on that rich and still unworked field of clinical observation.

The first clinical assumption relates eczema to certain age periods. The age incidence of 648 male and 489 female patients taken from my case-books shows a special liability in infancy and early childhood, then a fall, followed by a pronounced increase in the liability to eczema as age advances, reaching a peak at 50 to 60 years. The assumption is that there is an endogenous or constitutional factor in eczema which in certain predisposed people and at certain predisposing ages induces an eczematous eruption. In endeavouring to explain this internal or constitutional factor we are bound to touch upon the theory of a hypothetical allergic mechanism. There is a well-known but rare form of so-called eczema affecting the flexures, developing in early life and persisting for years, which is classified as allergic because of an association with asthma or hay-fever. But an allergic background such as this is very rarely observed in common eczema. Clinical experience thus entitles us to do no more than concede the existence of a hypothetical internal factor without further qualification. This does not prevent us from recognizing an occasional contributory factor, such as focal infection or food allergy. Lawyers have a maxim that hard cases make bad law. Those clinical curiosities in which eczema clears up after the extraction of a decayed tooth, or the parallel example of the appearance and disappearance of an eruption following the taking or withholding of an article of food, impressive although they may be, are, like the hard cases of the law, very insecure foundations upon which to base practice. These theoretical considerations lead to the following conclusions. Where re-education of the skin is called for in endogenous eczema we are compelled, because of our ignorance of the nature of the endogenous factor, to rely on a form of desensitization based upon a non-specific model, such as whole-blood injections, peptone, or methods which aim at exciting a febrile reaction. These procedures are based upon constructive clinical observations—for example, the obliteration of an eczema during the febrile period of pneumonia: their scientific explanation is still outside the range of pathological or biochemical attainment. They hint at the existence of a mechanism for rehabilitation, the shadow factories of Nature, which operate only under conditions of duress.

Some Methods of Desensitization

In 1925 in a communication to the *British Medical Journal* I described the mode and application of some of these then relatively unknown methods of desensitization. A ripened experience has confirmed my belief in their value, and I desire to reassert their importance when used under suitable conditions, which I shall summarize as follows.

In the acute phases of eczema, especially those associated with heat and swelling, intravenous injections of thiosulphate of soda are especially valuable. Five c.cm. of a 10% solution—that is, half a gramme of the pure salt—constitutes a dose: this intravenous injection should be repeated every other day on from 3 to 6 occasions. Whole-blood injections have a wider range of usefulness, and may be required in the subacute and chronic stages of eczema. The withdrawal from a vein and the intramuscular reinjection of 5 c.cm. of the patient's blood every 5 to 7 days for a course of 10 injections provides a suitable routine procedure which can be modified where circumstances seem so to dictate. Intramuscular injections of peptone offer an additional therapeutic resource in rebellious and refractory eruptions.

Procedures such as the above are described as safe, inasmuch as they rarely upset the patient or aggravate the disease. They can therefore be employed freely and with confidence. Methods which seek to induce febrile reactions, such as intravenous injections of typhoid vaccine, cannot be similarly classified, because they are capable of converting a simple and local eczema into a generalized and acute variety. Such therapeutic devices are forms of protein shock and should only be used, if used at all, in the treatment of, for example, established lichenized eruptions when methods of appeasement have not been discarded at the proper time. Although this form of treatment is not without disadvantage and even risk, I am bound to say it has given results where other methods have failed.

Varicose Eczema

Every practitioner is familiar with the combination of eczema and varicose veins, a half-way house linking the endogenous and exogenous conception of the eczema process, as the following clinical phenomena clearly reveal. First, varicose veins are common, but only a few of those who suffer from this complaint develop a complementary eczema. Therefore the presence of both varicose veins and eczema points to an endogenous eczema factor in that individual. Secondly, it is also constantly observed that if the varicose veins are successfully treated the eczema disappears. And, thirdly, it is possible to treat the varicose eczema successfully by suitable local applications without interfering with the varix either by surgery or by injections. The interpretation of these facts seems to be as follows: the varix produces a *locus minoris resistentiae* upon which, but only in a potentially eczematous subject, the eruption develops; but there is also a local or cellular dysfunction which can be overcome and set right by local treatment alone, despite the endogenous factor.

Eczematous Reactions

We can now pass under review certain paradoxical reactions observed in the more extensive forms of eczema. We are all familiar with the type which, beginning symmetrically on the legs, subsides or even clears up notwithstanding an extension in an acute form to other regions—the arms, for example. In these cases a process of autosensitization may be presumed whereby the skin has become sensitized to the products of its own damaged cells set free because the original eruption has been scratched or otherwise irritated. To satisfy the facts, this and other hypotheses must in such cases concede the presence of a circulating agent which is carried to the skin and there provokes the eczema eruption. But under these circumstances all the skin areas should react in the same way at the same time, which does not happen. Therefore as certain portions of the skin recover as the result of treatment or spontaneously, while elsewhere the eruption extends or develops, we are entitled to infer that the skin is in a sense self-governing and can restore its integrity despite the continued action of the internal or humoral factor. Exogenous dermatitis, now to be considered, is that form of eczema in which the eruption is brought out by contact with one or several skin hazards—that is to say, certain external agents which are known to be capable of provoking an eczematous reaction by contact. The distribution will therefore usually be on the backs of the hands, fingers, and forearms. To this rule there are necessarily many exceptions, depending upon the kind of occupation and the nature of the skin hazard, of which a formidable list could easily be prepared from those in common use in the various industrial processes to-day. Nor do the circumstances of home life confer freedom from exogenous dermatitis, as witnessed by the housewife's hands, chapped and excoriated by contact with soap and water or other agents used for cleansing and similar purposes; or from the use of chemical fertilizers in the garden. In these cases there is some degree of the internal factor, otherwise all workmen and all housewives would become similarly affected. Nevertheless, as in this class of eruption the cause is clearly external, it is properly described as an exogenous or contact eczema.

Sometimes the skin is specifically sensitized to one agent, as in primula dermatitis. In such cases, because of an idiosyncrasy, the individual is permanently sensitized to the skin hazard.

Treatment of Eczema

From this it follows that the topical treatment of eczema is in all cases essential, and will usually take precedence over the general—which is logical, because we can see and treat the faulty skin and can directly observe its reactions. While there is no standard treatment for eczema as such, there are certain guiding principles, which may be summarized as follows. The eruption presents itself in an acute, subacute, or chronic phase, each calling for a different kind of local application. Thus in the acute phase decongestion of the inflamed skin by an evaporating lotion is required, whereas an ointment is usually contraindicated by reason of the heating effect of an occlusive dressing. In the middle or subacute period a paste is suitable, the powder incorporated in this paste rendering it permeable and allowing the passage through it of exudate. Finally, a stimulating ointment or small doses of *x* rays are employed in the chronic phase. From this it follows that where eczema is widely distributed, different regions may require different forms of topical treatment to accord with the various forms of local reaction. This design of treatment can be represented in the following framework.

Acute:—Lead-glycerin, or calamine lotion
↓
Oily calamine lotion
↓
Subacute:—Zinc paste
↓
Chronic:—Zinc paste with either tar solution or crude coal tar, 6%; or *x* rays

The formula for the lead-glycerin lotion is as follows: glycerin of subacetate of lead, 1 oz.; glycerin, 1 oz.; and water to the pint. It is unfortunate that glycerin is in short supply, because we are thereby deprived of an invaluable remedy for which there is no real substitute. Lead-glycerin lotion is applied as a moist dressing on white lint, which must be kept constantly wet. A word may be added concerning the form of superficial *x*-ray therapy prescribed for chronic rebellious eczema. This should be reserved for localized patches of refractory eruption, and especially for occupational dermatitis affecting the backs of the hands. One-half of a full dose—that is, one-half of the amount required to cause the hair to fall out—is given, and is repeated if necessary in four weeks' time. This treatment should, nevertheless, be entrusted only to those experienced in this very highly specialized branch of radiotherapy.

This is the positive approach to topical therapy. There is also the equally important negative—that is, the avoidance of those things which delay recovery or provoke a relapse. Scratching, the injudicious use of soap and water, the effects of sun and wind, which includes therapeutic ultra-violet irradiation, are all to be reduced or excluded so far as possible. In some cases small doses of a sedative may be called for to reduce the over-sensitive reaction to simple external stimuli. Rehabilitation has now become an integral part of modern treatment: the re-education of the skin is an essential to recovery, and this applies in particular to exogenous dermatitis. To resume work before all traces of the eruption have disappeared is to court further trouble; a period of convalescence adds considerably to the prospect of permanent recovery except where there is an idiosyncrasy which precludes any future contact with the specific injurious agent. This is no more than the application of those general principles of treatment which are fundamentally the same throughout all the branches of medicine.

VISUAL PHYSIOLOGY OF THE CINEMA*

BY

GEORGE H. BELL, B.Sc., M.D.

(From the Institute of Physiology, University of Glasgow)

The moving picture has in the past been used to a certain extent for educational purposes both in schools and in universities, and when photographic materials become available once more it is certain that there will be a very great exploitation of this teaching medium. The fighting Services and propaganda authorities have no doubt of the value of this dynamic method of illustration. It is axiomatic that the best way to learn about a thing is to study the thing itself; the next best is to study a motion picture, particularly a slow-motion picture, of it. The other available methods—hearing and reading, which have been so long our only alternatives—are certainly inferior. Since the cinema is likely to play an even larger part in our general environment than it does at present, it is important that medical people should have some elementary knowledge of the physiological problems of moving pictures.

Design of the Cinema

The student comes to the class-room to learn, and no unnecessary difficulties or distractions should be put in his way. The quality of the projection should therefore be better, if possible, than that attained in the commercial cinema. Fortunately a committee of the Society of Motion Picture Engineers (1941) has issued a series of recommendations regarding the proper use of 16-mm. equipment, as this size has been generally accepted as the standard for educational purposes. These recommendations are the basis of the present account of the technical design of the cinema.

The details of the picture can be clearly seen if the observer is seated not more than six screen-widths from the screen. A position too near the screen is not to be recommended, because, as a result of the great magnification of the photographic image, the picture on the screen—even when properly focused—lacks sharpness. It has been stated that efforts of accommodation made in attempts to improve the definition may fatigue the ciliary muscles. Flicker also tends to be prominent when too near the screen, but disappears when the observer moves back (Masterton and Kellog, 1942). At the front of the class-room, where the screen appears largest, the roving movements of the eyes necessary to follow the action may

* Abstract of a lecture delivered in the Tennent Institute of Ophthalmology, Western Infirmary, Glasgow.

be excessive and are apt to produce fatigue. These excessive movements may, moreover, reveal flicker not seen when the gaze is steadily maintained. Flicker may be manifest on entering a theatre, but as a rule in a few minutes the sensation diminishes or disappears.

The screen should be filled by moving about the projector, which, with the usual 2-in. lens, will be 5¼ screen-widths from the screen. There will be one position in the room where the perspective of the projected picture is correct: since most 16-mm. pictures are taken with a 1-in. lens (or are reduced from 35 mm., which amounts to the same thing) this position is half-way between the projector and the screen. Other positions may give rise to error in the estimation of relative sizes of objects, but this does not seem to be important; the camera-man may use lenses of different focal lengths, and obviously the observer cannot be in the correct position for every one. It is important, however, not to sit too much to the side; at 40 degrees from the line at right angles to the screen the screen appears square, and this is not a tolerable amount of distortion (Tuttle, 1933). For school projection the viewing angle should not be more than 30 degrees.

The committee therefore recommends (*a*) that a picture-width equal to one-sixth of the distance from the farthest row of seats to the screen position should be adopted for class-room projection; (*b*) that no pupils should be seated closer to the screen than twice the picture-width; and (*c*) that no row of seats should be longer than its distance from the screen (Fig. 1).

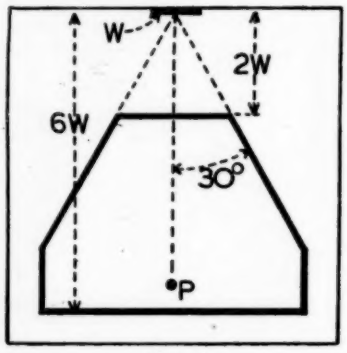

FIG. 1

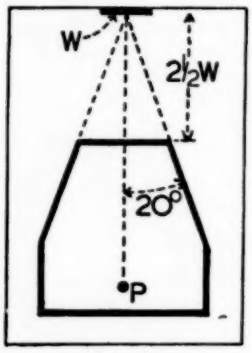

FIG. 2

FIG. 1.—Diagram of seating arrangement of class-room with mat screen of width W. The projector is situated at P. The thick line indicates the limit of the seating area.

FIG. 2.—Diagram of seating arrangement for a narrow room with a beaded screen.

(Modified from diagrams in the *Journal of the Society of Motion Picture Engineers.*)

The screen has an important influence on the seating arrangements. A screen with a mat surface—e.g., flat white paint—is 90% as bright at 30 degrees from the perpendicular as at 0 degree; no modification of the recommendations is necessary. Some screens have their surfaces coated with small glass beads. In this case most of the light is thrown back towards the projector even when it is at an angle to the screen. An observer on the centre line of the class-room sees a picture about four times as bright as that obtained with a mat screen, but the brightness falls off rapidly as he moves to the side: the maximum viewing angle should be 20 degrees. When an evenly illuminated beaded screen is observed from the front of the room one part of the screen may be very much brighter than the other parts; to reduce the variation of brightness to a tolerable degree no seat should be less than 2½ screen-widths from such a screen (Fig. 2). Screens coated with fine particles of aluminium, with either a smooth or a rough finish, should never be used for class-room projection as they show a pronounced bright area, and, being colour-selective, they are not suitable for colour films.

In a square room (Fig. 1) the mat screen is undoubtedly the best, and is certainly the kind to use. The beaded type may be used in a long room, with the precautions mentioned (Fig. 2). It is necessary to point out what is so often forgotten—screens need to be kept clean. A screen which has deteriorated may waste up to half the light falling on it, as well as cause distraction when the image appears to move across mottled areas (Falge, 1931). Wandering of the attention of the spectators is diminished if the area around the screen is dull and featureless; the border of the screen is probably better grey than black.

It remains to decide the brightness of the projected picture which will allow the eyes to work at full efficiency (Projection Screen Brightness Committee, 1936). If the light is too weak picture quality suffers, contrast diminishes, high lights are weak, and detail cannot be seen from the back row of seats. If there is too much light, graininess may become evident, high lights dazzle, and flicker become apparent. It has been found by trial that the desirable brightness corresponds to 10 foot-lamberts* with the projector running but with no film in the machine. Under these conditions, at a speed of 24 frames per second with a two-bladed shutter there will be an objectionable 48-cycle flicker. Under normal conditions, however, flicker is not noticeable, because the brightness-range of the picture is usually from 8 to 28% of that of the blank screen. The brightness may be increased by using a two-bladed shutter in place of the three-bladed one often supplied; whether flicker becomes obvious depends partly on the illumination and partly on the projector design. Flicker and also film wear would be greatly reduced if a continuous instead of the present intermittent projection method were available; the optical difficulties are, however, considerable.

The required light output in lumens equals—

$$\frac{\text{Desired brightness (foot-lamberts)} \times \text{Area of screen (sq. ft.)}}{\text{Screen reflection coefficient (as decimal)}}$$

For example, a mat screen 3 ft. by 4 ft. with a reflection coefficient of 0.75 needs a projector output of $\frac{10 \times 12}{0.75} = 160$ lumens. It is expected that manufacturers will soon give values for their projectors. For ordinary class-rooms there will be no difficulty in obtaining adequate brightness with incandescent lamps, but where the screen size exceeds 8 or 9 ft. arc lighting may have to be used.

The quality of the picture suffers if the projection-room is not adequately darkened, but complete blackness is neither necessary nor advisable; a general room-light of 1/10 foot-candle (with which it is just possible to read newsprint) is not harmful, and may be appreciated for reasons of safety or of discipline.

The Illusion of Reality

Having dealt with some of the features in the design of the cinema, I should like to describe a few of the reactions on the spectators of what is presented to them on the screen. It is fairly true to say that most of the advances in film technique have been introduced to give the audience a greater feeling of reality. Mechanical improvements in cameras and projectors have made movement less jerky and have eliminated shake and flicker; development of radio technique has given us a sound accompaniment; photographic advances have improved tonal quality and have recently given us colour—surely a great step towards reality. We might well ask what will be missing from the complete illusion when stereoscopy is added, as it must be before very long.

The answer is that many things will be missing, the absence of which is not appreciated because of the accommodating and uncritical qualities of the human mind. The silent films seem very strange to us now and would not stir our emotions to any degree, though many of us can still recall how we were shocked when the films began to talk. We are accustomed to seeing pictures in black-and-white and we accept without question the absence of colour. To avoid undue mental shock colour has to be introduced gradually in the middle of a monochrome film. Disney's *Fantasia* was surely a riot of colour, but it began with rather severe shots of the orchestra in black and orange. Stranger still, when we see coloured films of natural scenery we are apt to describe them as unnatural when in fact the colour rendering is extremely good. The book *Film*, by Rudolf Arnheim (1933), is a most interesting example of this conservative attitude. Arnheim actually welcomes the photographic and physiological restrictions of the medium: the film cannot represent Nature accurately, and the more it attempts to do so the less likely is it to be artistic; and, further, colour and stereoscopy are considered to be dangers to artistic presentations because they make the moving picture too natural.

* A lumen is the amount of light falling in one second on a unit area placed at right angles to the direction of the light at unit distance from an international candle. The foot-candle is the unit of illumination equivalent to one lumen per square foot. A foot-lambert is the brightness of a surface emitting or reflecting one lumen per square foot.

The camera is single-eyed and therefore true vision of depth is impossible, but the image projected on the flat screen gives us a feeling of depth by variations in size and intensity, by perspective and parallax: a man walking away from the camera becomes smaller, less well-defined, and moves across the background. Occasionally I have noticed that viewing the screen with two eyes gives a smaller feeling of depth than does monocular vision—perhaps because both retinal images are the same. In the absence of stereoscopy perspectival excisions are sometimes rather obvious—the corner of a newspaper in front of a man's face may cut a piece out. There is no doubt that stereoscopy is the most important factor in perception of depth (Washburn and Wright, 1938) and that if it were added to cinematography a great step towards the complete illusion of reality would have been achieved. There is no short cut to stereoscopic vision: each eye must be given a slightly different view. A few stereoscopic moving pictures have been made and shown publicly. A number of methods are possible (Norling, 1941; Langlands, 1943), some of which do not even require the spectators to wear special apparatus over the eyes—surely an amazing example of human ingenuity.

Although the eye and the camera are constructed on similar principles, and although the images on the retina and on the film are, so far as we know, very much the same, yet we do not see exactly what is projected on the retina. If I stretch out my hand it does not seem to grow bigger, in spite of the increase in the size of your retinal image. This peculiarity of vision which gives us constancy of size and form has been called by Thouless (1931a, 1931b, 1932) phenomenal regression to the real object. A square card lying on a table in front of us is always seen as a compromise (the phenomenal shape) between the shape calculated from the laws of perspective (the stimulus shape) and the actual square (the real shape). The camera images and the projected images are faithful renderings of the stimulus shape, and may thus give rise to distortion. In cartoons it may be important to draw the shapes not according to formal perspective but so that the resulting sensation is the same as that evoked by the actual objects. Regression depends on clues of depth; if, therefore, the illusion of depth is complete, as in stereoscopic cinematography, the image thrown on the screen should obey the laws of perspective. Since at present the illusion is not complete a compromise between the phenomenal and stimulus shapes would probably give the best results.

The eye readily rejects images that are obviously inappropriate—e.g., the image of a squinting eye. The eye, like the camera, can be focused accurately for only a small range (depth of focus) at any one time. Out-of-focus images are not normally seen; continuous adjustment of accommodation ensures that each plane is examined while in focus, so that the subjective impression is that the whole depth of the scene is in accurate focus. The disadvantage of camera vision has been overcome by multiplane photography in which successive planes are focused in turn and recorded without blurring of detail.

It is curious how soon after entering a cinema we forget the severe restriction of the visual field—at two screen-widths distant it is 28 degrees, at six widths only about 9 degrees. Attempts have been made to increase the size of the film and of the screen, but these have not been successful. The small field of vision makes it difficult to replace clues normally provided by the proprioceptive nerve endings. In a street scene we may be shown barrows being pushed uphill with obvious effort to give us a second-hand notion of the appropriate muscular sensation denied to us lounging in our seats. Sometimes the camera is made to look round (pan) so that we may be given a wider view; when the picture is projected we get the impression that the scenery is floating past. If the eye is fixed, movement of an external object from right to left causes movement of the retinal image from left to right, and we are aware that the object has moved. When the eye glances from left to right the retinal image again moves from left to right, but the external object does not appear to move and may not even be seen. The failure of reciprocity can be clearly seen if a neon lamp on a.c. mains is used as the test object (Bell, 1943, unpublished). It seems reasonable to deduce that proprioceptive impulses arising in the external eye muscles are responsible for the reduction of visual sensation during eye movements. Normally we take in a scene in a series of glances, but if the camera made glancing movements the projected picture would be very unsatisfactory, since our proprioceptors would be unaffected. In the present state of physiology it is hardly possible to imagine how artificial but appropriate proprioceptive stimulation could be supplied to an audience.

We are thus a considerable distance on the road to the complete illusion of reality, but there are many problems yet to be solved. It seems to me that a great bar to improvement of film presentation lies in the multiplicity and complexity of the techniques employed in one moving picture. It may even be that if the technique for the perfect illusion were available it would be an impossible medium. The main difficulty would be to find a superhuman creative worker who would be first an artist and then a technical expert in matters tactile, olfactory, proprioceptive, and auditory, as well as in three-dimensional colour.

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ENCEPHALOMYELITIS FOLLOWING VACCINATION IN FIFE

BY

G. MATTHEW FYFE, M.B., Ch.B., D.P.H.

Medical Officer of Health, Fife County

AND

J. B. FLEMING, M.D.

Medical Superintendent, Thornton Infectious Diseases Hospital

The three outbreaks of smallpox which occurred in Scotland during 1942—in Glasgow in May (32 cases), Methilhill, Fife, in August (29 cases), and in Edinburgh in October (36 cases)—were each followed in Fife by a public demand for vaccination. The vaccinal state of the public was low. It was estimated that in Methilhill only 20 to 30% of the population had been previously vaccinated; while at Cowdenbeath, a town in which one case of smallpox occurred at a late stage in the outbreak, between 40 and 50% had been vaccinated. The percentage of vaccinated infants in the county as a whole is normally 30.7. The number of people at all ages who received primary vaccination following upon the outbreaks was therefore in excess.

During the Glasgow outbreak free vaccination was offered in Fife through general medical practitioners, and no specific instructions were issued as to any method of insertion; but when cases at Methilhill were found to be suffering from an infection of high potency, and when one of them who had been vaccinated by the single-stroke method sickened with smallpox ten days later, instructions were given that three insertions be made 3/8 in. long and 1/8 in. apart. For the most part this method was followed, but it is known that some practitioners continued to employ the single-stroke method or undertook multiple scarification. It was not possible to collect accurate information regarding the sequelae of the methods used, but it was ascertained that severe local reactions and prostration more often followed the three-stroke method. This method was largely employed in the affected area, and absenteeism at the local coal-mines, which continued for an average of two days, rose from a normal level of 5% to 15%, and at a local emporium employing about 200 people from 0.5% to 6%.

In all, 54,698 doses of lymph were issued by the county public health department to private practitioners and to public clinics. Of these, 7,151 were obtained from a private firm immediately the presence of smallpox became known. The remainder came from the Government lymph establishment. Orders for lymph were placed daily, so that fresh material was always in use. Stocks were kept in refrigerators overnight.

On the whole, post-vaccinal disorders were of comparatively brief duration, and, although no reliable evidence was forthcoming that vaccination had in general a deleterious effect on health, the occurrence of 9 cases of encephalomyelitis following on vaccination gave rise to disquietude. Two had been vaccinated with lymph from the private firm and seven with Government lymph. The following table shows the relation of the cases to the number of vaccinations performed:

	Glasgow Outbreak	Methilhill Outbreak	Edinburgh Outbreak (Cowdenbeath)	Total
Public vaccination centres ..	—	21,232	10,961	32,193
Docks, factories, collieries, hospitals, L.A. staffs, etc. ..	—	3,466	431	3,897
Medical practitioners, non-panel patients	1,360	19,081	5,657	26,098
Ditto, Panel patients (estimated)	997	8,993	3,148	13,138
Total	2,357	52,772	20,197	75,326
Cases of encephalomyelitis ..	—	8	1	9

All of the 9 patients were children of ages varying from 3 years to 17 years, and in each the vaccination had been a primary one. All were reported to have been in good health before vaccination, except one child who was suffering from whooping-cough, on account of which fact encephalitis following on whooping-cough could not be entirely discounted. The vaccination lesion was a single vesicle in each case, and was pursuing an apparently normal course. No information was obtained regarding the method of vaccination employed. Nervous symptoms occurred ten to twelve days after vaccination, at a time when the usual constitutional upset of vaccinia begins to subside.

In six cases the clinical findings pointed to a diagnosis of encephalitis, with headache, vomiting, and drowsiness or coma as the predominant features; four of these patients died. In two cases the symptoms and signs, localized to the spine, indicated a diagnosis of myelitis; both recovered rapidly. In one case the nervous complication took the form of an acute lymphocytic meningitis; recovery was rapid and complete.

The main features of the cases are summarized in the table opposite, but a clearer clinical picture will be conveyed by a brief summary of the case histories of the patients under our care.

Case I

A boy aged 3½. Primary vaccination on 11/10/42, before which he had had a slight cough. He sickened on 21/10/42, and on 22/10/42 he became drowsy. On admission (23/10/42): Temperature 98.4° F.; pulse 142; respirations 30. A poorly nourished, ill-looking child, listless, limp, and drowsy. When roused he was irritable, but was apparently clear mentally. There was flaccid paralysis of lower limbs with strongly extensor plantar reflexes: trismus present; pupils equal and reacted to light; squint present; follicular tonsillitis present and also cough of whooping-cough type. The child's condition gradually deteriorated, with rising temperature and pulse rate, drowsiness deepening to coma, and onset of spasticity of limbs, particularly noticeable in the flexor muscles of the arms. He died 48 hours after admission. Permission for necropsy was refused. Although the diagnosis of whooping-cough was reasonably certain on clinical grounds, *H. pertussis* was not grown on cough plate cultures exposed on the day before death.

Treatment.—From the time of admission he had 0.5 g. of sulphapyridine four-hourly. Twenty-four hours after admission he was given 20 c.cm. of antivaccinial horse serum (Lister Institute) intramuscularly.

Case II

A boy aged 10. Was vaccinated on 11/10/42 and became ill on 22/10/42 with headache and sleepiness. On 23/10/42 he was feverish, with headache, vomiting, and drowsiness. On 24/10/42 he became delirious and was admitted to hospital. On admission: T. 102.4° F., P. 124, R. 22. A sparely built boy, unconscious, restless, and emitting short high-pitched cries at intervals, especially when disturbed; incontinence of urine. Examination was difficult on account of restlessness; eyes normal; no spinal rigidity; plantar reflex flexor on right and doubtful on left; abdominal reflexes absent; tache cérébrale present; throat acutely inflamed. 25/10/42: Still drowsy, but much less irritable; trismus present; could be made to drink with difficulty; temperature normal. 26/10/42: Simple questions answered for first time since admission; left plantar reflex flexor; pulse rate 56. 29/10/42: Plantar reflexes flexor. 1/11/42: Both legs stiff. 2/11/42: Well in all respects.

Treatment.—A few hours after admission he was given 30 c.cm. of antivaccinial horse serum (Lister Institute)—23 c.cm. intravenously and 7 c.cm. intramuscularly. His mother, who had been vaccinated in infancy, revaccinated in 1927, and again on 11/10/42, gave a quantity of her blood on 25/10/42. The boy received 140 c.cm. of his mother's serum intramuscularly—60 c.cm. on 25/10/42 and 80 c.cm. on 26/10/42. The only drug used was a soneryl suppository as a sedative during the first night.

Case III

Boy aged 8. Was vaccinated on 12/10/42 and had fairly severe vaccinia from 19/10/42 to 21/10/42. From then he was in normal health until the evening of 24/10/42, when he became listless and drowsy. On 25/10/42 he was acutely ill with severe headache and drowsiness, temperature 104° F. On 26/10/42 he became delirious and had difficulty in speaking and drinking owing to trismus.

On admission (26/10/42): T. 100° F., P. 96, R. 20. A strong, well-nourished boy, listless and drowsy; mentally clear when roused; eyes normal; tendon reflexes normal; no rigidity of spine; abdominal reflexes diminished on left side; plantar reflexes flexor on right, extensor on left; throat mildly inflamed. 27/10/42: Coma had developed during the night; by midday he could be roused only with great difficulty; trismus present; abdominal reflexes absent on left side, diminished on right side; plantar reflexes extensor on left, doubtful extensor response on right. 29/10/42: Brighter mentally; severe spasticity of legs and left arm; tendon reflexes exaggerated; spastic tremor of left leg; extensor plantar reflexes both sides. 30/10/42: Less spasticity of legs; plantar reflexes flexor. 31/10/42: Temporary return of severe spasticity of legs. 1/11/42: Mentally alert; well, apart from stiffness of left leg.

Treatment.—On 27/10/42 blood was taken from his mother, who had been revaccinated on 12/10/42. The boy was given 180 c.cm. of his mother's serum—20 c.cm. intravenously and 80 c.cm. intramuscularly on 27/10/42, and 80 c.cm. intramuscularly on 28/10/42.

The salient features of Cases VII, VIII, and IX are given in the accompanying table. These three fatal cases were not observed by us, but from the histories obtained there is little doubt regarding the diagnosis.

In all of the six cases described the picture is one of encephalitis, with headache, vomiting, and drowsiness or coma, producing paralyses, at first flaccid and later spastic. In most of the cases the upper motor neurones affected were notably those related to the limbs, especially the lower limbs. Thus in five cases positive Babinski signs were recorded at some time during the illness—in the sixth no mention is made of the test being carried out. In the three cases seen by us trismus was a feature of the early stages of the disease, causing difficulty in drinking and speaking. In the two cases which recovered there was no evidence of residual weakness at the time of discharge from hospital, and five months later there was no suggestion of mental or nervous disturbance.

We regard Cases IV and V as examples of post-vaccinial nervous complication in which the inflammation of the central nervous system is localized to the spinal cord. Encephalomyelitis is often referred to in the literature, but we can find only three references to post-vaccinial myelitis as a clinical entity (Zappert, quoted by Rolleston in *Acute Infectious Diseases*, 1940, p. 420; and McKenzie, *Proc. roy. Soc. State Med.*, 1943, **36**, 235. Inconclusive reference is made to a case in the Report of the Committee on Vaccination, 1930).

Case IV

A healthy boy aged 10. Was vaccinated on 14/10/42 and became acutely ill on 26/10/42, with severe backache in the lower thoracic region and pain radiating round his side to the right subcostal region. He had slight headache and sickness on 28/10/42, and was admitted to hospital. On admission: T. 98° F., P. 112, R. 20. A strong, well-nourished boy, alert and bright mentally; marked spinal rigidity with obvious "tripod" sign present; Kernig's sign positive; no nuchal rigidity, but any attempt to flex the spine, even the cervical spine, produced acute pain in the lower thoracic region and sharp pain in the right subcostal area; abdominal reflexes absent; plantar reflexes flexor on right side and extensor on left side; tendon reflexes normal. The spinal rigidity gradually passed off during the next three days, and he was discharged well on 4/11/42. He had had no drugs or immune serum.

Case V

A girl aged 6. Was vaccinated on 13/10/42, and became ill on the evening of 24/10/42 with nausea, listlessness, and later drowsiness. On admission (27/10/42): T. 97° F., P. 100, R. 20. A well-nourished, bright, and alert child; extreme stiffness and pain on

movement of lower half of spine; no nuchal rigidity or stiffness of legs; plantar reflexes flexor on left and extensor on right. 28/10/42: Lumbar puncture; cerebrospinal fluid clear; 35 mononuclear cells per c.mm.; spine still stiff and painful in the lumbar region. 30/10/42: No stiffness of spine; left plantar reflex extensor. 3/11/42: Well in all respects; no weakness of legs. She was given no drugs or immune serum.

Acute myelitis of this type is unlikely to endanger life, and has therefore neither the gravity nor the importance of encephalitis. Severe backache is a common feature of severe vaccinia, and it seems probable that post-vaccinial myelitis occurs more frequently than is generally realized. Thus Dr. J. Veitch, Cowdenbeath, in a private communication informs us that in his practice during the vaccination campaign "several cases (males) previously unvaccinated complained of pain and leg. 6/11/42: Child improving, but still severe stiffness of neck and spine; still very irritable; there was difficulty in inducing her to drink. 7/11/42: Much brighter and less stiffness of spine; stiffness of the left leg. 9/11/42: Well in all respects excepting marked stiffness of both legs; reflexes normal. 14/11/42: Discharged well.

Treatment.—On 4/11/42 blood was taken from the child's father, who had been revaccinated on 22/10/42. 140 c.cm. of the father's serum was given intramuscularly—40 c.cm. on 4/11/42, 80 c.cm. on 5/11/42, and 20 c.cm. early on 6/11/42. Starting at noon 5/11/42 with 1 g. and continuing with 0.5 g. four-hourly, 15 g. of sulphapyridine was given.

Case VI appears to be an example of post-vaccinial meningitis or meningo-encephalitis. An alternative diagnosis is benign lymphocytic choriomeningitis, a virus infection giving a

Table showing Principal Features of the Cases

Case	Age (yrs.) and Sex	Date of Vaccination (Primary)	Onset of Illness	Admission to Hospital	Leading Symptoms and Signs	Cerebrospinal Fluid	Final Diagnosis	Evidence of Concurrent Infection	Treatment	Result
I Methilhill	3½ M	11/10/42	21/10/42	23/10/42	Drowsiness; vomiting; paralysis of legs	Clear; pressure increased; Pandy's test pos.; 8 mononuclear cells per c.mm.	Encephalitis	Whooping-cough and follicular tonsillitis	Sulphapyridine 0·5 g. 4-hourly; 20 c.cm. antivaccinial horse serum on 24/10/42	Died 25/10/42
II Methilhill	10 M	11/10/42	22/10/42	24/10/42	Headache; drowsiness; delirium	Clear; pressure slightly increased; Pandy's test pos.; 60 mononuclears per c.mm.	"	Follicular tonsillitis	30 c.cm. antivaccinial horse serum; 140 c.cm. maternal serum	Recovered. Discharged 5/11/42
III Coal town of Balgonie	8 M	12/10/42	24/10/42	26/10/42	Headache; drowsiness; trismus	Clear; pressure slightly increased; Pandy's test neg.; 50 mononuclears per c.mm.	"	Mild tonsillitis and pharyngitis	180 c.cm. maternal serum	Recovered. Discharged 5/11/42
IV Markinch	10 M	14/10/42	26/10/42	28/10/42	Backache; neuritis; stiffness of spine	Clear; pressure slightly increased; Pandy's test neg.; 15 mononuclears per c.mm. Wassermann neg.	Myelitis	Nil	Lumbar puncture only	Recovered. Discharged 4/11/42
V Methilhill	6 F	13/10/42	24/10/42	27/10/42	Backache; stiffness of spine	Clear; pressure normal; Pandy's test neg.; 35 mononuclears per c.mm.	"	"	" " "	Recovered. Discharged 3/11/42
VI Coal town of Wemyss	5 F	22/10/42	3/11/42	4/11/42	Drowsiness; headache; spinal rigidity	Clear; pressure increased; 300 mononuclears per c.mm.	Lymphocytic meningitis	Tonsillitis and pharyngitis	140 c.cm. paternal serum; 15 g. sulphapyridine	Recovered. Discharged 14/11/42
VII Buckhaven	4½ F	11/10/42	22/10/42	—	Drowsiness; coma; flaccid paralysis of legs; Babinski's	Clear; pressure increased	Encephalitis	Rales all over chest	15 c.cm. paternal serum on 25/10/42	Died 26/10/42
VIII Buckhaven	3 M	11/10/42	22/10/42	—	Vomiting; drowsiness; coma	—	"	History of laryngitis at onset	—	Died 23/10/42
IX Cowdenbeath	17 F	18/11/42	30/11/42	1/12/42	Headache; vomiting; drowsiness; coma; spinal rigidity; Babinski's; hyperpyrexia; incontinence	Clear; pressure normal; sterile	"	Nil	Lumbar puncture only	Died 3/12/42

rigidity in the cervical spine on the tenth to twelfth day after vaccination." Discussing the various types of nervous sequelae of vaccinia, Rolleston (*loc. cit.*) refers to Zappert's description of a meningeal form simulating tuberculous meningitis. Case VI in our series falls into this category.

Case VI

A girl aged 5. Was vaccinated on 22/10/42, and was taken ill on 3/11/42 with drowsiness, headache, and backache. On admission (4/11/42): T. 98.6° F., P. 128, R. 26. A well-nourished child of spare build, rather pale and acutely ill. There was a tendency to drowsiness, but she was cross and irritable when disturbed; throat acutely inflamed; severe nuchal rigidity; Kernig's sign strongly positive. Abdominal plantar and tendon reflexes normal; eyes normal. Cerebrospinal fluid clear; pressure increased; 300 cells, mainly mononuclear, per c.mm. Bacteriologist's report: "Protein, 40 to 50 mg. per 100 c.cm.; sugar present but markedly reduced; Lange reaction, 1112110000; Wassermann reaction negative; no acid-fast bacilli or other organisms demonstrated." 5/11/42: Still acutely ill; severe spinal rigidity; tremor of left arm and clinical picture similar to that of Case VI. This child, however, was much more seriously ill than any of the cases of benign lymphocytic choriomeningitis seen by us, and the chance of this relatively rare disease occurring within the usual period for post-vaccinial nervous complications is very remote. It is reasonable to assume that, occurring as it did twelve days after primary vaccination and being accompanied by tremor and spasticity of the limbs, the meningitis was produced by the same cause as that of post-vaccinial encephalitis. It is of interest to note that the fatal Cases I and VIII were those of second cousins.

Commentary

Immune serum was used in the treatment of the serious cases seen by us. Cases I and II had antivaccinial horse serum (Lister Institute), but there was not enough evidence to make any decision regarding its value. It produced no serum reaction in Case II, although 23 c.cm. was given intravenously. In Case I the horse serum was probably used too late to be

effective, and in any case the fatal issue was undoubtedly hastened, and possibly caused in part, by the whooping-cough.

It was fortunate that the parents had been revaccinated about the same time as their children, since a source of human immune serum was then readily available. Parental immune serum proved to be of great value when given in large doses—e.g., 140 c.cm. The procedure can be followed without serious risk of serum reaction. It appears to us that in Case VII the dosage of parental immune serum was inadequate and, as in Case I, given too late to be effective. The rapidity of the illness seems to indicate that immune serum must be given early and in large quantity to be successful. Thus, when Case III was admitted, the patient did not appear to be ill enough to justify serum treatment, and in several hours he became comatose. We were convinced at the time that his life had been endangered by the delay of 24 hours in starting serum therapy.

The success of immune serum in the treatment of post-vaccinial encephalitis suggests that it is the virus of the vaccinia which is the causal agent. There is no method of ascertaining the virus content of lymph, and vaccinia may produce all degrees of severity of constitutional upset, and, as shown in our cases, the nervous complications may vary widely. Why should occasional cases develop serious involvement of the nervous system? Are they infections arising from the unsterile nature of calf lymph? Another possible explanation is that the susceptibility of the nervous system to the vaccinial virus may be increased by the presence of concurrent infection. In support of this theory it appears to us to be significant that most of our cases showed evidence of acute upper respiratory infection. Thus Case I had clinical whooping-cough and follicular tonsillitis; Cases II, III, and VI had acute pharyngitis; Case VII had "rales in chest"; and Case VIII had a history of laryngitis. The findings at least suggest that the hazard of encephalitis during vaccinia is much greater when there is concomitant infection in the upper respiratory tract.

Post-vaccinial encephalitis is extremely rare in infancy. Therefore, so long as the danger of smallpox exists, vaccination should be urged in infancy. With modern speed and facility in travel there is nothing to indicate that this danger is likely to disappear.

When primary vaccination of children becomes unavoidable—e.g., during an epidemic of smallpox—it would be a wise precaution to insist on vaccinating or revaccinating the parents at the same time. By so doing a source of safe immune serum would be made readily available if required, and this could be given in large doses—e.g., as a transfusion of plasma on the first indication of cerebral involvement.

Summary

In the Fife outbreak of smallpox in 1942, 8 cases of vaccinial encephalomyelitis occurred among a group of 52,772 recently vaccinated persons and 1 case among a group of 20,197 persons. The incidence in both groups is high, particularly in the first—1 in 6,600.

The case mortality was 44%.

In six of the cases symptoms were entirely of cerebral origin and in two they were of spinal origin—apparently an uncommon manifestation. In one the symptoms were predominantly meningeal.

Much benefit was obtained through the prompt use of parental immune serum in large doses.

It is suggested that there may be a liability to onset of encephalomyelitis in unvaccinated persons suffering from acute infections of the upper respiratory tract.

Vaccination is urged in infancy in view of the risk of involvement of the nervous system in later years.

If primary vaccination of children becomes unavoidable steps should be taken to secure a source of immune serum as a precaution.

Speaking at the twentieth meeting of the German Dermatological Society last year, Conti (*Dtsch. med. Wschr.*, 1942, **68**, 1230) said that it was hoped in the future to have a uniform specialist service attached to the health offices. The obligation to obtain treatment must be enforced more strictly. Thus, in the case of syphilis, the accepted salvarsan treatment was obligatory, but a patient was not forced to accept some therapeutic measures, such as cystoscopy, catheterization, dilatation of the urethra, and lumbar puncture. The duty of secrecy still existed, and it was laid down that a patient who had not refused treatment must not be notified by name.

PHENIODOL: A NEW CONTRAST MEDIUM FOR CHOLECYSTOGRAPHY

BY

F. H. KEMP, M.B., Ch.B., M.R.C.P., D.M.R.

(*The Radcliffe Infirmary, Oxford*)

The object of this communication is to introduce a new contrast medium for cholecystography which is claimed to be better than tetraiodophenolphthalein.

Literature of the Phthaleins

Graham and Cole, in 1924, first succeeded in visualizing the gall-bladder by means of a radiopaque substance excreted through the liver. They were influenced by the pharmacological studies of Abel and Rowntree (1909–10), who showed that the phthaleins and some of their derivatives were mainly excreted in the bile. The first experiments were made with the free acid and sodium salt of tetraiodophenolphthalein, but unfortunately the preparations proved toxic and some of their animals died. Ultimately they achieved success with the calcium salt of tetrabromophenolphthalein. The drug was injected intravenously in doses of 5 to 5.5 g. in 40 c.cm. of distilled water, and films were taken 7, 8, 24, and 32 hours afterwards. A second report (Graham, Cole, and Copher, 1924) showed that the sodium salt was better.

The possibilities of the new test aroused the keenest interest. Within a year other American workers—notably Carmen and Counseller (1924)—had confirmed its value. It was shown that the most common and most reliable sign of disease is failure of the gall-bladder to fill with the drug. However, many patients experienced severe toxic reactions after the injection, as the dose had too small a margin of safety.

Meanwhile, Graham and his associates (1925) had continued their researches. They reported that the toxic effects of tetraiodophenolphthalein were due to impurities, and could not advocate this compound for clinical use owing to the difficulties of obtaining pure preparations. Shortly afterwards Whitaker and Milliken (1925) showed that a pure preparation of tetraiodophenolphthalein had definite advantages. Though there was little difference in the comparative toxicity of the iodine and bromine compounds, the former was clinically superior because in a dose of only about half the size of that necessary with the latter it gave a denser and more sustained shadow. These findings were confirmed as preparations of tetraiodophenolphthalein became available.

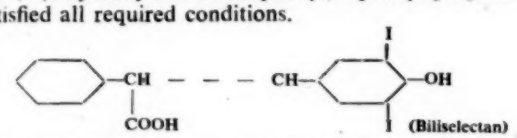
At first tetraiodophenolphthalein was given intravenously, but some of the early workers were not entirely satisfied with this procedure and persisted with other methods. Stewart and Ryan (1925) stated that a considerable number of persons showed unpleasant reactions when it was given intravenously—"so much so, that in hospitals with which we are connected it was not deemed advisable to continue intravenous injections except when all other methods of diagnosis had failed." For routine purposes they preferred oral administration, and were supported by no less authorities than Carmen and Moore (1925). This view gradually gained support as the quality of the preparations improved, and nowadays oral administration is the method of choice.

With the oral method the majority of patients experience some unpleasant reactions. Some of them complain of its disagreeable taste, many have nausea, a few are sick, and many have diarrhoea. There seem to be differences in the severity of the reactions with various preparations in different localities. Menees and Robinson (1938) tried to find a better preparation. They examined calcium, lithium, potassium, and magnesium salts of tetraiodophenolphthalein, but for various reasons all were rejected except the magnesium salt. They found that a 5-g. dose of this salt gives a shadow of the same density as 3.5 g. of the sodium salt of tetraiodophenolphthalein. It was more palatable and was less apt to produce reactions. After use of the magnesium salt, 76% were symptom-free, whereas only 12% had no symptoms after the sodium salt. Though this report was favourable the manufacture of the magnesium salt was not taken up in this country.

Other Contrast Media

Attempts to produce other more suitable compounds have been recorded by Pribram (1927), who put forward iodized atophan as a contrast medium. It was sold in Germany under the name of biloptin. This substance gave good reliable contrast pictures; but though it was at first thought to be well tolerated, subsequent work showed that a large dose caused damage to the liver, and even with the necessary dose it was not unusual to find casts in the urine. Later, Pribram (1936) tested a derivative of quinoline containing iodine. This gave excellent pictures, rich in contrast, but on technical grounds it was not introduced commercially.

Dohrn and Diedrich (1940), working in the laboratory of Schering A.G., Berlin, tried to make a substance suitable for peroral administration which would be better tolerated than tetraiodophenolphthalein. They reported that they had tested a large number of synthetic compounds by estimating the iodine content of bile flowing from a biliary fistula in animals. One drug—β-(4-hydroxy-3:5-diiodophenyl)-α-phenyl-propionic acid—satisfied all required conditions.



(Biliselectan)

The substance was given clinical trial by Kleiber (1940), who reported that it is an excellent, entirely harmless, well-tolerated peroral contrast medium which gives shadows superior to those obtainable by intravenous injection of tetraiodophenolphthalein. It is sold by Schering A.G. under the name biliselectan. Each dose of 3 g. of the active substance is put up in the form of sugar-coated granules.

Kleiber reported his findings after 55 cholecystographies. In 25 cases in which no gall-bladder shadow was found the examinations were controlled by means of intravenous tetraiodophenolphthalein, but a negative picture resulted in all. Of these 25 cases 24 were operated upon, and in each case a diagnosis of obstruction of the cystic duct was confirmed.

The British Preparation Pheniodol

Papers giving the chemical structure and some facts about the properties and clinical application of biliselectan reached this country in 1941, and Dr. W. Baker, working in the Dyson Perrin's Laboratory in Oxford, devised a method of preparing the substance, a certain quantity of which was available for preliminary experiments.

The free acid is a white crystalline powder which is insoluble in water. It is readily soluble in weak alkali, but in this form is extremely unpleasant to take. Prof. J. H. Burn of the University Department of Pharmacology reported that it was well tolerated by animals, with no signs of ill effects. In one experiment a bitch of 7 kg. weight received 3 g. of the drug by mouth. She was observed for 24 hours, during which time she displayed no symptoms. She was then killed and portions of the stomach, intestine, liver, and kidney were submitted for histological section. These tissues were all well preserved and showed no abnormality that could be detected by ordinary histological methods (Dr. A. H. T. Robb-Smith).

The first clinical trials were made with a small quantity of the preparation supplied by Dr. Baker. Three adults were each given a dose of 4.2 g. suspended in water or milk. They made no complaints other than a slight sensation of burning in the mouth, like the flavour of a radish. Films were taken in the usual manner at 10 o'clock on the morning after administration—i.e., 16 hours later. The drug seemed to have been completely absorbed in one case, as none was visible in the bowel, and only small amounts were unabsorbed in the other two. All three showed a dense shadow of the gall-bladder similar in appearance to that usually given with 4 g. of tetraiodophenolphthalein. Three other subjects were given doses of 5, 6, and 7.5 g. respectively. All three had diarrhoea and slight abdominal discomfort in the night. The shadows of the gall-bladder were no better than those given with 4.2 g.

As the results of these trials were satisfactory Dr. Baker sent in his report to the Medical Research Council, whose Therapeutic Trials Committee later asked me to undertake further tests with preparations supplied by different firms. In the meantime it was decided that the drug should be known officially as pheniodol.

Pheniodol under Test

The preparations were submitted in powder form. With each dose of 4.2 g. instructions were sent to the wards that the powder was to be mixed and stirred into a glass of milk and to be taken instead of the usual preparation of tetraiodophenolphthalein on the evening before the examination. The results were most disappointing. Almost all the patients complained of an unpleasant taste and discomfort in the throat. Some had noticed that the preparation was lumpy and that the lumps tended to stick in the mouth and cause burning. Radiographs showed masses of unabsorbed drug in the bowel. It was clear that in the majority of cases the drug had not been properly mixed, but it seemed advisable to consider alternative methods of dispensing.

The symptoms can be easily explained. The drug is insoluble in water and soluble in weak alkali. In the soluble form it is very bitter to the taste, and when swallowed causes burning in the mouth and throat. When given as a suspension in milk or water there is a tendency for the powder to form lumps unless it is properly mixed. These small lumps tend to stick in the crevices of the mouth, pharynx, or oesophagus, where they are dissolved in the natural alkaline secretions. If the drug is carefully mixed into a paste and then stirred into milk there is seldom any complaint, very slight burning being readily relieved by a drink of water. If not given properly the patient may experience discomfort for hours, and is often sick.

In a second series of cases each dose was dispensed in 1 oz. of mucilage prepared by hand in the hospital dispensary. On the day before the examination the patient was given breakfast and lunch as usual, but no special fatty foods to empty the gall-bladder as some authorities advise. At 4 p.m. the patient had tea and toast or bread-and-jam without butter or margarine. He was encouraged to take sugar in his tea. The drug was given at 6 p.m. in a glass of milk. Films were taken 16 hours later.

The findings with three different preparations are summarized in the accompanying table. So far as could be ascertained all the preparations of different manufacture were similar.

	B.D.H.	Glaxo	Boots	Total
No. of tests	31	16	30	77
Unpleasant taste	16	6	21	43
Nausea	10	7	15	32
Vomiting	2	1	1	4
Diarrhoea:				
Slight	3	4	7	14
Moderate	—	3	2	5
Pain on micturition	5	2	2	9
Dense filling	24	12	23	59
Faint ,,	3	1	—	4
No ,,	4	3	7	14

Of those showing "No filling" the findings of a pathological lesion were verified at operation in ten cases, all being associated with stone. The others were not operated upon. Three of the cases showing a faint filling were associated with stone.

Analysis of Reactions

The patients' symptoms were analysed, with the following results:

Taste.—Many patients noticed a slight burning sensation in the mouth and throat. A few complained of a horrid taste and others disliked the mucilage. It was clear that the method of dispensing was still at fault.

Nausea and Vomiting.—Nausea was associated with persistent burning in the throat. Only four patients vomited, and of these two were subsequently found to have gastric or duodenal ulceration with gastric stasis, and another was in the habit of vomiting frequently. In one case there was no explanation other than the taking of the drug. All four patients had slight abdominal discomfort. The drug must be a mild gastric irritant, especially when there is delay in emptying the stomach, and for this reason it is suggested that the patient should always drink a glass of water after taking the drug, which will tend to wash it towards the bottom of the stomach and so hasten its elimination.

Diarrhoea.—About a quarter of the patients had diarrhoea. In many cases this was only slight, but in others it was sufficient to interfere with sleep. In most instances the diarrhoea was probably related to variations in individual susceptibility to the drug as an intestinal irritant. Bigger doses are more liable to produce

diarrhoea, without significant improvement in the contrast of the radiographic image.

Pain on Micturition.—A small number of patients complained of slight burning on passing urine on the morning after administration. Two had slight suprapubic discomfort, which suggested irritation of the bladder. None of these showed any sign of renal damage.

The manufacturers interested in pheniodol have since carried out further research into the dispensing of the drug. One firm (Glaxo Laboratories Ltd.) submitted samples of the drug in the form of sugar-coated granules. I carried out further tests, and found that the preparation was very satisfactory providing that the patient was asked not to chew or suck them. The granules readily dissolve in the intestinal juices.

Another firm (British Drug Houses Ltd.) has prepared the drug in the form of a fine powder which is readily suspended in water or milk. This preparation is also very satisfactory, though sometimes the patient mentions some slight burning in the mouth and throat; but this is readily relieved by a drink of water.

Comment

Since the introduction of cholecystography we have learnt a great deal about the behaviour of the gall-bladder in health and disease. Though numerous reports testify to its value many doctors still do not realize that reliable results can be obtained only by careful attention to technique and interpretation. Before giving any opaque material a preliminary radiograph should be taken, for failure to do so may result in faulty diagnosis. Unless definite gall-stones are revealed the examination should always be completed.

The most reliable results are obtained by the intravenous method of administration, but this is seldom employed to-day on account of the liability of tetraiodophenolphthalein to cause unpleasant reactions, venous thrombosis, or sloughing of the tissues if any escapes from the vein. The oral method is simpler and the results are reliable in a large proportion of cases, but on account of the tendency of the sodium salt of tetraiodophenolphthalein to cause vomiting or diarrhoea the radiologist sometimes has difficulty in assessing whether enough of the drug has been absorbed. Rowden (1933) tried to avoid these difficulties by administering the drug in No. 3 gelatin capsules, which he himself filled so that the drug might be fresh. His procedure gives excellent results; but few people take the trouble to prepare the gelatin capsules, and most workers prefer to give the drug in fluid form. I hope that pheniodol will prove less troublesome and therefore more reliable, as I have tried to show in this paper.

Normal Cholecystography.—A dense well-filled gall-bladder shadow which is normal in size and shape and of uniform opacity and which contracts after a fatty meal to a much smaller size is almost always normal. Very occasionally gall-stones may be obscured by the density of the shadow and are revealed only by a film taken with the patient standing erect or by serial films of the emptying of the gall-bladder. More frequently, mistakes are made because the observer does not appreciate that the gall-bladder is seldom completely filled with the opaque medium, and so fails to realize that it is possible to report normal findings when a stone may be held in the ampulla of the gall-bladder or in Hartmann's pouch. Likewise it is generally assumed that stones in the cystic duct always cause no filling, whereas there may be several stones in the duct without impairment of filling, concentration, or emptying.

Faint Filling.—Even when technical standards are fully satisfied I doubt whether the opinion given by Graham and his associates (1925) can be upheld. They state that "the sensitiveness of cholecystography in revealing abnormalities of the gall-bladder is one of its most striking assets in the diagnosis of slight degrees of chronic cholecystitis"; or, in other words, slight degrees of chronic cholecystitis cause impairment of the ability of the gall-bladder to concentrate the drug. I believe that this view is incorrect, for I have seen two cases of chronic cholecystitis with gross inflammatory thickening of the walls of the gall-bladder which had shown no impairment of concentration of the drug. With the oral method, too many factors influence the absorption of the drug for us to state whether variations in its concentration in the gall-bladder are of functional significance, so that a faint filling should be classed as normal unless it is shown to be constant at repeated examinations.

No Filling.—The most reliable sign of disease is no filling of the gall-bladder. In most cases this signifies either that the cystic duct is blocked by stone or mucus or that the gall-bladder is grossly diseased or full of stones. To be sure that there is no mistake the radiologist should check all factors influencing the absorption and elimination of the drug and should make certain that the films are properly centred and exposed. The test should never be conducted when the patient is jaundiced or when there are other clinical signs of hepatic insufficiency, for the medium is likely to induce further hepatic injury and the gall-bladder rarely fills. In less severe cases of liver disorder a satisfactory shadow is given if the gall-bladder is normal. There may be no filling if the patient is unable to absorb fats or if he has been on a fat-free diet for a long time.

In every case cholecystography should be followed by a barium meal to show whether the stomach empties naturally and to exclude any organic disorder which may affect the significance of the findings.

Conclusions and Summary

Pheniodol is a reliable peroral cholecystographic medium. Suitable preparations in doses of 3 to 6 g. give a shadow of the gall-bladder similar in density and filling to the best obtained with 4 g. of tetraiodophenolphthalein. It is less objectionable to take, and seldom causes vomiting. Diarrhoea occurs in some cases, but not more often than with tetraiodophenolphthalein.

An account is given of the interpretation of oral cholecystography in the light of present-day knowledge.

I wish to thank the Medical Research Council for allowing me to carry out this investigation. I am indebted to Prof. L. J. Witts for his help with the clinical work and to Mr. F. H. Robinson of Glaxo Laboratories for his invaluable criticisms. Messrs. Glaxo Laboratories, the British Drug Houses, and Boots of Nottingham supplied me with the different preparations of pheniodol. I very gratefully acknowledge the help of Dr. J. F. Brailsford, who first taught me the principles of cholecystography.

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A CASE OF CONVERSION HYSTERIA

BY

RANYARD WEST, M.D., M.R.C.P., D.Phil.

(Department of Psychology, University of Edinburgh)

We seldom see a case summary that shows in outline the actual course of a short and successful psycho-analytical treatment: a lot is said about psychotherapy in general, but very little about its methods and techniques. Here is such a case. I hope the technique explains itself. The actual conversion symptoms are unusual.

A. B., an insurance clerk aged 30, complained of increasing difficulty in drinking. He could drink water in the morning, though not easily. Later in the day fluid always "went the wrong way," and in consequence he dared not try to swallow. His trouble started four or five years previously, when he thoughtlessly bolted some iced lemonade at a dance and choked himself so severely that he was in a panic and waiters had to rush to his assistance. Fourteen days later, and after describing this incident to some friends, he was for the first time unable to swallow readily. The disability then got steadily worse. His medical student fiancée had recently expressed the opinion that he was suffering from a spasm of the throat and from an inferiority complex.

A. B. was a very tall, gracious, and immaculate young man with a fresh fair complexion, rather anxious blue eyes, and a very

prominent and large lower jaw. His test swallowing of air involved a big movement, but he performed it without difficulty. He pointed out, quite truthfully, that his palate was anaesthetic to a normally adequate stimulus. When he was given a glass of water he held it to his mouth, tilted it a lot, made much play with lip movements, got red in the face, and swallowed small quantities with much apparent effort.

True to type, there were other symptoms behind the presenting one. The patient readily volunteered that he "wanted to confess to fear"; he had struggled against it since the age of 11. Before that time he had been fearless, especially in fighting, which he used to enjoy. From kindergarten days he had always fought upon the assumption that he would win. But at 11 he was involved in two fierce fights in the school wash-house. In the first the other boy did not wish to fight but A. B. did. The enemy fought very pluckily, but A. B. worked himself into a "tremendous fury" and at the end the other boy was "a nasty sight." In the second fight A. B. early received a glancing blow on the face near the jaw. Suddenly he felt he must run away or he would be "knocked to pulp." He acted on the impulse, and since then had never been able to hurt anyone or to stand anything approaching a row. Later on, as an adult, unreasonable fear had become attached to car-driving, cliff-climbing, and other adventures in which he forced himself to accompany an "utterly fearless" fiancée Above all, he feared the occurrence of a situation where honour demanded that he should fight—e.g., an insult offered to his young lady.

A. B.'s interests were connected with refined city life. He was sociable, friendly, and humorous, and a Sunday-school superintendent. He described himself as likely to be a "perfect curate," and this occupation he has since adopted. But into his developing ideas about people there had crept an observant but peculiar interest in physiognomy. In his own mind he classified people into two types according to the shape of their jaws. Men or women of one, which he called the "aggressive" (meaning successfully aggressive) or "leader" type, had vertical ascending rami to their mandibles and receding lower jaws with the upper front teeth more prominent than the lower. He held that, in contrast, a backward-sloping vertical ramus, prominent lower jaw, and protruding lower teeth, together with a small mouth, "caused" a recessive weakness of character. This "non-leader" type, into which the patient himself exactly fitted, also had thin lips and a small and quiet swallow, as opposed to the large mouth, full lips, large and noisy swallow of "leaders, children, and natural people." His fiancée was in this favoured category.

School associations were taken first. They led A. B. to remember an earlier incident in the school wash-house. The school bully had been publicly ducked in front of a yelling crowd, and "nearly drowned." He had been frightened by the sight itself and by the "lynching atmosphere." By free association from this sight A. B. next recaptured early fears of asphyxia—e.g., when a cushion was held over his face as a child and in an attack of whooping-cough. He was an only child. His mother (of "leader" type) had clouted him, his father (a "non-leader") grumbled and drank, and there were constant difficulties between the parents throughout his upbringing. Some alarming fantasies of drunken men hitting women, while he stood by terrified and powerless to intervene, led him to the recollection of actual attacks of fury with his father for upsetting his mother and making her cry. He had wanted to hit him.

A return to considering his contemporary fears, and especially the question, "Why could he never attack?" led him suddenly to the conviction that he had always felt that a blow on his jaw would be fatal. "They'd catch me there. And *my* jaw is so thin!" The discovery that his cowardice was due to an *imagined* inferiority increased his assurance; and A. B. now began to develop the themes, "If Father had only trained me I'd have been able to take care of myself," and, "Fighting is not bad fun if you're built that way." With some difficulty he managed to face in imagination the possibility of "administering physical correction in an extreme case on behalf of a lady." Then, partly freed from fear of disaster and spurred to a just cause, he imagined himself weighing in more heavily. With increasing gusto he went through the motions of buffeting a foe, to the accompaniment of appropriate remarks from an imagined audience: "Bravo, sir! Nice uppercut!" In the midst of this exercise he suddenly became very excited and exclaimed that something was broken. He had hit his opponent right on the point of the jaw. Immediately he saw a conservatory in which his father sat with his mother upon his knee. It was a well-remembered photograph from the family album, with Mummy in her long skirts that he used to peep under and a blouse with bones in the neck, and Daddy tired and retiring, "like an undeveloped twig, with his kindness and temper, lack of discipline with me and heavy-handedness with her." He was surprised they were so intimate.

At this point in his treatment there was a considerable change in his contemporary attitudes. With awkward colleagues he now required prayer to maintain his calm. He spat out aggressive remarks and then prayed for humility. He was no longer afraid of physical consequences: the issue now was between passion and restraining principle. In the following session he disposed of an imaginary aggressor against his fiancée with mixed feelings of hatred and liking of the undertaking. To his intense satisfaction a return blow on his own "Achilles heel," the jaw, did not seem to hurt him. Then came a second crucial analytic hour. Feeling that "honour would attach to it," and with some reassurance from me about the physical effects, he first slapped in the face a man who was insulting his fiancée, and then—"Oh! I hate doing this"—went for a burglar who was hitting his mother, smashed his head with a poker, and throttled him. While he was trying in vain to see "the real cause" of his anger, his mother's assailant changed into a drunken man. He struck at him wildly, pulled his hair, sobbed, and then hit him crash on the jaw, nose, and mouth. Asked to see the face of his adversary, he found he could not, because it had a "Guy Fawkes mask on." The scene was repeated by request, and this time the "blinding rage" was absent "unless he does something extreme, such as jump on her." Then, "Oh! I can get it against Father! Oh! don't make me do that! I hit him, smash him to pulp, there, where Mother had phlebitis when I was 24." He lay on the couch and sparred away in mid-air, while his exclamations reached a climax of excitement and tears.

The case did not require to be taken much further into "deep" analysis. At succeeding sessions A. B. discovered, behind his own aggressiveness, fears that his father would in his turn attack him. He imagined himself a baby and his father lurching against him "as if in a sudden impulse of anger." Again, as quite a young child he had got a fish-bone stuck in his throat, and his father had apparently held his head under the tap as a remedy ("He might go on and I'd be powerless to stop him"). In reliving the incident he felt frustrated, hopeless, then acquiescent. Besides thus being at once an object and a source of aggressiveness, his father was associated with the forbidding of all pleasure. He had emphasized every risk in life, deliberately those of hitting and drinking (e.g., from public fountains), and by unintentional implication all those attendant upon personal desires. Oral pleasures had always been valued highly by this patient. Beneath his resentments against his father was much love for him, with many happy memories. But his father had been inferior in character to his mother, and A. B., with his weak character, deceptive jaw, and erring mouth, resembled his father.

The first beneficial effects of recapturing his "death wish" against his father was that A. B. developed a new efficiency at squash rackets. But after tracing all his fears to his complicated relations with his father—resentment, jealousy, identification in type, and underlying love—he felt that he could swallow as well as hit, and that, at least in the latter pleasure, there were few restrictions to the indulgence of his adult desires. He thereupon drank water without difficulty; and shortly afterwards he drank beer readily enough at his pre-marital bachelor celebrations.

A short review of the differences between adult and childhood aims closed the analysis at the 40th session. A. B. threw off the legacy with which the inability of his real father to lead him and to forgive and discipline his passions had left him. He was able to meet his adult requirements through a revaluation of aim and a reliance upon that "something more than Father" which chimed with his religious convictions.

Medical Memoranda

An Unusual Diphtheria Infection

Diphtheria infection of the mouth, anus, and genitals is not common, and its occurrence as a complication of childbirth and the puerperium must be rare. Faucial diphtheria in the newborn appears to be even more unusual. Rolleston (1939) was able to collect 12 cases (including only one personal case) of faucial diphtheria in the first two months of life. A clinical sequence of those two rarities is herewith recorded.

Case History

Mrs. A., aged 24, was admitted to Thornton Isolation Hospital at 1.30 a.m. on July 29, 1941; temperature 101° F., pulse 144, respirations 28. She was extremely exhausted and pale, and looked gravely ill. She had been in poor health for some time. About July 26 she began to have discomfort in the mouth, followed by difficulty in swallowing and discomfort at the anus on the 27th. She was confined on July 28. Examination revealed an extensive thick grey membrane firmly adherent to the floor of the mouth, extending from the root of the tongue forward to the edentulous lower gum and also lining the sulcus between the gum and lower lip. The throat was acutely inflamed but showed no membrane. The submaxillary and submental glands were severely swollen. The anus and an area within a 2-in. radius were acutely inflamed and covered with thin grey slough or membrane. The membrane could be easily removed with a swab, leaving a raw wound similar to a burn a few days old. On each side of the vulva in the sulcus between the labium majus

and labium minus there were raised indurated areas of inflammation about 1 in. by 1½ in. covered with thin grey adherent membrane. Smears taken from the mouth showed no evidence of Vincent's angina. Swabs and pieces of membrane were later reported to reveal the presence of the true diphtheria bacillus.

At the time of admission 48,000 units of diphtheria antitoxin were given intravenously. On July 31 she was still dangerously ill. The buccal membrane was loosening. There was an area of deep inflammation in the right buttock. The vulvar membrane had now extended into the vagina and over the urethral meatus. There was retention of urine. Sulphanilamide 0.5 g. was given four-hourly and one pint of glucose and saline intravenously. On Aug. 5 she was still desperately ill, though the membrane in mouth and vulva had now cleared. She was given a transfusion of 18 oz. of citrated blood. Henceforth she improved steadily. The vulva did not heal until Aug. 18 ; the urine was not free from albumin until the 28th; her temperature did not settle until Sept. 9, and her pulse rate did not remain below 100 per minute until Sept. 15. There were no nervous complications. She was allowed up on Sept. 19 and was discharged on Sept. 22. Large doses of vitamins B and C and ferrous sulphate were given from the first week.

Mrs. A.'s baby, aged 7 days, male, was admitted on Aug. 4, 1941, with a history of nasal discharge since Aug. 3. On admission at 5 p.m. the baby's general health was fairly good; temperature 98° F. There was a napkin rash on the buttocks. The baby had a purulent nasal discharge and both tonsils were covered by white membrane. The cervical glands were slightly enlarged. 8,000 units of diphtheria antitoxin were given intramuscularly. A throat swab and a nasal swab each gave a culture of the true diphtheria bacillus of intermediate type. The throat was not clear of membrane till Aug. 6, and throat swabs were negative during the third week. In spite of the absence of nasal discharge from the second week, negative swabs from the nose were not obtained till Sept. 14. Apart from an intercurrent bronchiolitis on Aug. 30, which cleared in three days with sulphapyridine, the baby throve, and was discharged on Sept. 16, having gained 2 lb. while in hospital.

A few days after the baby was admitted its aunt, aged 30, was also admitted suffering from faucial diphtheria. She gave a history of direct contact with the baby, and her infection also was of the intermediate type. She made an uneventful recovery.

Thornton, Fife. JAMES B. FLEMING, M.D.

REFERENCE

Rolleston, J. D., and Ronaldson, D. W. (1940). *Acute Infectious Diseases*, 3rd ed., London.

Mastoiditis without Middle-ear Signs

The following case may be thought interesting enough to merit publication:

A girl aged 6 came to hospital on May 18, 1943, with a letter from her family doctor stating that she had had her tonsils and adenoids removed six weeks before, had had an attack of measles two weeks before, and that there was now a slight swelling behind the left ear.

Examination of the tympanic membrane showed that it was white and that the malleus was not even injected. A slight swelling was present behind the ear. Her temperature was 99.8° F. On May 19 I made an incision over the mastoid process and found the subcutaneous tissue much increased in thickness. I then performed a mastoid operation, dealing only with the mastoid and not touching the middle ear, but removing the bridge of bone over the external semicircular canal. On removing the bone over the antrum thick yellow pus flowed out in profusion. The bone over the dura in the upper and posterior angle of the wound was absent, and the dura itself was covered with granulation tissue. Further removal of bone showed that the cells of the mastoid down to the tip were full of thick pus. The bone over the lateral sinus was removed, and the lateral sinus was found to be normal; there was no pus in the middle ear. I treated the cavity with 1 in 20 carbolic acid followed by industrial alcohol, and then filled the wound with sulphacetamide (albucid) cream. Undermining the skin so that the thick subcutaneous tissue could fall into the wound, I sutured the skin completely except for a small aperture at the lower angle, into which I inserted a long and a short drainage tube.

The after-treatment consisted of the injection of 2 c.cm. of mercurochrome 5% in 20% alcohol four-hourly for three days, and acriviolet 1% in 20% alcohol four-hourly for one day, the tubes being removed on the fifth day. Sulphanilamide was given four-hourly every day till June 1, with one Benerva vitamin B_1 tablet, and half a teaspoonful of sodium bicarbonate, on account of the absence of bone over the dura, which was covered with granulations. After the tubes were removed the fistula was dressed with sulphacetamide paste and the wound was strapped once a day, and the patient was given six ascorbic acid tablets daily.

The evening temperature after the operation was the same as on admission (99.8°). On the second and third evenings it was 99° F., and during the rest of her stay in hospital was normal. She made an uneventful recovery, and was discharged on June 15, the twenty-seventh day after the operation.

The only explanation I can give of the normal tympanic membrane and middle ear is the presence of a tympanic dam, which Heath (1919) describes.

W. S. THACKER NEVILLE, M.D.Dub., F.R.C.S.Ed.

REFERENCE

Heath, C. J. (1919). *Diagnosis and Treatment in Cases of Otitis Media*, p. 21, London.

Reviews

LECTURES TO THE LAITY

The March of Medicine. The New York Academy of Medicine Lectures to the Laity, 1942. (Pp. 217. 16s. 6d.) New York: Columbia University Press; London: Oxford University Press. 1943.

The March of Medicine is the title of the seventh series of lectures given to non-medical audiences at the New York Academy of Medicine. The selected subjects—tuberculosis, medical psychology, and nutrition—are precisely those of topical interest to the educated public, and each of them is admirably handled. Dr. J. A. Miller shows clearly how steady has been the advance in knowledge of the pathology and clinical course of tuberculosis, and how intermittent has been the progress in control of the disease. Tuberculin, over-feeding, gold therapy, and various other methods have had their day and failed; solid advance has chiefly been in the environmental factor and the intervention of the surgeon. *X* rays have greatly aided diagnosis, but have also revealed fresh difficulties in the way of its achievement. Despite all these drawbacks the mortality was steadily falling until the outbreak of this war. That it should be rising again now proves the prime importance of environmental conditions. Yet "tuberculosis still confronts us as a major challenge."

Dr. Tracy Putnam's lecture on the brain and the mind is an interesting criticism by a neurosurgeon of T. H. Huxley's conception of man as a "conscious automaton." He shows that behaviourism yields meagre data compared with those of psychological procedures. Even the naive impressions and judgments of any untrained man are better able to predict what a given normal individual will do in a given complex situation than are the formulas at present deducible from what is known of the physiology and pathology of the brain. And, as Dr. Putnam points out, the exploration of the unconscious mind has still further widened the gap. This is followed by a lecture on the Freudian epoch by Dr. A. A. Brill, himself the pioneer of that epoch in the United States. We all know how Freud's methods started from the study of hysteria; it is less well known how deeply he was influenced by the philosophy of Descartes. As a historical review of Freud's progress this lecture is excellent. Dr. Gesell makes a gallant if unconvincing attempt to explain the genesis of genius, though he has some entertaining comments to make by the way on mental growth in childhood. Dr. Norman Jolliffe has an easier theme in the history of the B vitamins. We are glad to see that he gives the correct date—1906—for the first contribution from Gowland Hopkins on "accessory food factors," as this is so often overlooked in the attention given to his later papers; also that due recognition is given to Casimir Funk's crystallization of the conception of deficiency diseases. Because Funk regarded vitamins as amine bodies, the importance of his generalization is often forgotten.

Dr. A. J. Carlson concludes the series by a talk entitled, "The Newer Knowledge of Nutrition," and asks, "How much of it is knowledge?" He vigorously sifts the grain from the chaff. Like every scientific advance with a popular appeal, the subject of vitamins has been clogged by a good deal of pseudo-science; endocrinology has only recently been able to purge itself of most of such encumbrances. His trenchant criticism of humbug and overstatement, which are apparently more rife in the U.S.A. than in this country, is salutary reading.

QUEEN CHARLOTTE'S TEXTBOOK OF OBSTETRICS

The Queen Charlotte's Textbook of Obstetrics. Sixth edition. By the Members of the Clinical Staff of the Hospital. (Pp. 577; illustrated. 25s.) London: J. and A. Churchill. 1943.

With each new edition this book goes from strength to strength. The authors and publishers are to be congratulated on the excellence of the new and sixth edition, which must rank as one of the best textbooks on midwifery available in English. The teaching is direct, concise, and reasoned. The authors state what they believe and practise and why they do so, and for the most part they teach sound orthodox obstetrical principles and methods. The newly established diagnostic *x*-ray department at Queen Charlotte's is directed by Dr. E. Rohan Williams, who has rewritten the radiological section for the

new edition. With the material at his disposal and the close co-operation of the clinical staff it is to be hoped and expected that important contributions will be made from this new department, especially on the subject of *x*-ray pelvimetry. Sections of the book which are exceptionally good deal with abortion, hyperemesis, sepsis, disproportion, abdominal pain, and the baby. There is one minor criticism. When methods practised at Queen Charlotte's are described they could well be supported by reference to results obtained at that institution. Results obtained elsewhere are irrelevant except as a basis for comparison. For example, in describing eclampsia and its prognosis reference is made to the report of the London Committee, 1922, in which the maternal mortality was recorded at the appalling figure of 22%, but no idea was given of how effective is the treatment the authors advise and practise. On the other hand, in discussing breech deliveries the hospital results are given. They are not good, and the section would have its value enhanced rather than weakened if this fact were freely admitted and methods by which results could be improved were discussed. It is not enough to assume and declare that "a relatively high proportion of stillbirths is unavoidable in cases of breech presentation." This is not the way of progress.

The posterior position is not well handled. As all who practise obstetrics are well aware, it is a common source of trouble to both the general practitioner and the consultant. Failed forceps, foetal deaths, foetal injuries, maternal morbidity and on occasions mortality, are so frequently due to the undiagnosed or even the diagnosed posterior position. For this reason one would expect a thorough discussion on the handling of such cases. The authors have taken the easy way out by dealing only with those cases in which full dilatation is present. They constitute a minority of those which cause trouble, and a fuller discussion of the subject is essential.

Apart from these minor points for criticism the book is a splendid one.

BIOCHEMISTRY

Laboratory Directions in Biochemistry. By Victor C. Myers, Ph.D., D.Sc. (Pp. 288. 18s.) London: Henry Kimpton.
The Dynamic State of Body Constituents. By Rudolf Schoenheimer, M.D. (10s.) Oxford University Press.

Laboratory Directions in Biochemistry is a collection of class sheets of the author's practical class in loose-leaf plastic binding. Approximately half of the 288 pages are left blank for the student's notes. There is no index, explanation of the directions is rarely given, and attendance at the author's lectures and demonstrations is assumed. The book is therefore of little value outside the author's school. There are illustrations of apparatus found in every laboratory however ill equipped—e.g., a basin and burette arranged for titration; and yet in a detailed description of the use of the du Noüy torsion balance, with references to the various parts by letter, the reader is directed to Morse's *Applied Biochemistry* for the illustration! The course is an extensive one, too long for medical students in this country and too medical for science students. The actual directions are clear, but usually they are just orders without explanation. This book is probably invaluable for the author's own students, but the reviewer cannot recommend it for use in this country.

The three Dunham Lectures incorporated in Dr. Schoenheimer's book give a clear and stimulating account of the recent employment of isotopes in the study of metabolic processes. The theme throughout the three lectures is, "All constituents of living matter, whether functional or structural, are in a steady state of rapid flux." The evidence is impressive. With the bibliography and index provided the book makes an excellent survey which can be confidently recommended to all interested in this topic.

A PERENNIAL

The Medical Annual, 1943. Edited by Sir Henry Tidy, K.B.E., M.D., F.R.C.P., and A. Rendle Short, M.D., B.S., F.R.C.S. (Pp. 432; illustrated. 25s. net.) Bristol: John Wright and Sons; London: Simpkin Marshall.

The *Medical Annual* for 1943 appeared in the second half of this year, and it is probable that the faithful many have already got their copies of this excellent yearly publication, edited jointly by Sir Henry Tidy and Prof. Rendle Short, supported by a first-class team of contributors.

Problems of war medicine and surgery are given full consideration. The subject of burns is dealt with in two full and excellently illustrated articles by Cecil P. G. Wakeley and by Sir Harold Gillies and J. B. Cuthbert. The former includes an instructive whole-page plate illustrating a section of the skin and the various levels of burn destruction. Gillies and Cuthbert show some remarkable pictures of "pollicization" of the index finger in a case in which a burn had destroyed the thumb. A well-documented article (there are 113 references) under the title of "Chemotherapy of Bacterial Invasion" is contributed by R. St. A. Heathcote, who gives a useful review of antibacterial products of fungi and of bacteria and of the sulphonamides. Major-Gen. L. T. Poole and Lieut.-Col. H. J. Bensted contribute excellent accounts of typhus and of yellow fever. These are but a few of the good things among much that is excellent. There are one or two points that might call for comment. We could not find any reference to sandfly fever or infective hepatitis, and perhaps space could be given every year to an article under the heading of "vital statistics." The very well written survey of "legal decisions" seems to us to be too long in these days of paper shortage. Another encroachment on paper is made by the list of appointments under the contributors' names at the beginning of the volume. Some of them, so to say, go all "Who's Who"; several modestly occupy two lines only with name and appointments; the longest is eleven lines, occupying just on 1¼ in.

As all its readers know, the *Medical Annual* gives a fair amount of space to advertisements, thus affording useful information to the practising doctor, who possibly looks upon the inclusion of an advertisement in the *Annual* as carrying with it some mark of approval: if this is the case, we should like to see a little more sifting of the bad from the good.

Notes on Books

Dr. Myrtle B. McGraw has usefully collected her studies of the past few years into one volume, and in *The Neuromuscular Maturation of the Human Infant* she tells in some detail the fascinating story of normal child development with reference to structural development of the controlling mechanism. Some of her work has already been noted in these columns, and it should be made clear that the present volume is a new book and not merely a collection of reprints, though it is obvious that the author has drawn widely on her previously published papers. Studies of neonatal behaviour, the development of neuromotor activities, and some aspects of early sensory development occupy the bulk of the book. The opening chapter on structural foundations of behaviour, based largely on the work of the late Dr. F. Tilney and of Dr. J. LeRoy Conel, is too compressed for readers unfamiliar with modern work on intimate brain structure. The final section, on maturation and learning, is full of interest for all concerned in educational theory and practice—of the pre-school child more particularly. The book concludes: "Neurologists tell us that man does not begin to use all the cells in the cerebral cortex. An optimum educational system may be able to tap some of these reserve neural potentials." Altogether this is a valuable contribution to the field of educational psychology in the early stages of life. It is published in this country by the Oxford University Press at 13s. 6d.

The Natural Development of the Child, by Agatha H. Bowley, Ph.D., of the Leicester School Psychological Service, was noticed in these columns soon after it appeared in May, 1942, with particular commendation of the final chapter on children's reactions to the war. This chapter has been expanded in the second edition by some further material illustrating the spontaneous opinions of school children about certain aspects of the present war. The publishers are E. and S. Livingstone of Teviot Place, Edinburgh, and the price is 8s. 6d., plus 5d. for postage.

Oliver and Boyd Ltd. have published at 2s., on behalf of the Imperial Bureau of Animal Breeding and Genetics, a pamphlet, *Gestation Periods: A Table and Bibliography*, compiled by J. H. Kenneth. The table gives the average gestation period in days for each of the animals listed in alphabetical order, with minimum and maximum for some of the animals, and with each item there is a reference number to the corresponding entry in the bibliography. This compilation does not include any comments.

The Famine Relief Committee, 67, Brook Street, W.1, has published a pamphlet, price 2d., entitled *A Year's Work*, giving an account of efforts to obtain permission for controlled and limited food relief in German-occupied countries. The committee also issues a leaflet on the present food situation in Belgium by its Advisory Medical Council, of which Lord Horder is chairman.

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EPIDEMIC INFECTIVE HEPATITIS

Among infections that have given rise to special interest during this war, epidemic hepatitis stands out. Variously called "epidemic hepatitis," "common infective jaundice," "epidemic catarrhal jaundice," "epidemic jaundice," "acute infective hepatitis," the disease was attracting the attention of numerous investigators in the immediate pre-war period. In an article in this *Journal* in 1937[1] Hugh Barber observed that in recent years sporadic cases of what he called "infective hepatic jaundice" had been common in South Derbyshire. Before the last war Cockayne[2] had differentiated the milder type of epidemic jaundice from the severer form found in 1914 to be due to infection with the *Leptospira icterohaemorrhagiae*. Differentiation was carried further by Hurst and Simpson,[3] who separated catarrhal jaundice from infective hepatic jaundice; but their view has since been challenged. From evidence that was summarized in an annotation three years ago[4] it appears that the condition discussed is an acute hepatitis, is infective, and often appears in epidemic form. Perhaps, therefore, the most comprehensive descriptive term would be "epidemic infective hepatitis," the word "jaundice" being dropped, as it is but a variable symptom of the disease. At present the infective agent is believed to be a virus.

In his interesting description of an outbreak in the Lavant valley in Sussex J. L. Newman[5] observed that unless the disease was known to be prevalent the diagnosis might offer difficulty. One of his patients, for example, began the illness with rigors, was delirious, vomited, and had a temperature of 100° F.; pneumonia was suspected, the patient becoming jaundiced on the fourth day. In other cases the early clinical picture may resemble that of meningitis. The onset may be gradual or acute, with fever, nausea, vomiting, abdominal pain, and leucopenia. According to Barber jaundice usually appears the day after the onset. In the cases recorded by Newman[5] and by Evans[6] jaundice appeared at any time from the first to the twenty-eighth day after onset, a not uncommon time being 7 to 9 days after. In a series of patients (about 180) described by Hallgren[7] the pre-icteric period averaged about 6 days, with a range from 1 to 14 days. It is noteworthy that over 8% of his cases had rigors, and pains in the head and limbs were common symptoms. The icteric stage lasted about three weeks, and it was about three weeks from the onset before the temperature was normal. In some cases the serum bilirubin had not returned completely to normal by the end of three months. The higher the serum bilirubin in the early stages, the longer the illness was likely to last. Loss of weight, which averaged about 2 kilos, was at its height in the third week, and it was some 7 weeks before weight was regained. Owing to the fact that these patients had tuberculosis it was difficult to determine the mortality, but it is estimated at less than 1%. As Evans[6] points out, acute infective hepatitis often entails several weeks of invalidism, and he also noted that the red-cell sedimentation rate may remain elevated for some weeks after an attack—even a mild one. Cameron[8] stresses the importance of treating the condition as a serious disease of the liver. In necropsies of four cases (not in his own series) he found microscopical changes of subacute necrosis in the liver, but no macroscopic or microscopical changes in the biliary tract of two of them. Most of these recent descriptions of the disease confirm the accurate observations made thirteen years ago by W. N. Pickles,[9] who gave an account of 250 cases of "epidemic jaundice" in Wensleydale in the North Riding of Yorkshire. Pickles described a pre-icteric stage lasting from 4 to 10 days, with loss of weight, nausea, vomiting, and pains in the back and limbs as symptoms. In his cases the icteric stage usually lasted 14 days, but occasionally longer. In this paper Pickles refers to the surprise he felt when, as a newly qualified assistant, he encountered an epidemic of jaundice in 1910—a condition not referred to in his medical school or textbooks. His principal, however, informed him that frequent epidemics had occurred in his 30 years of practice, which shows that the disease has been with us for at least 60 years.

Among the points about which exact information is wanted are the incubation period, the duration of infectivity, the infecting agent, the method of spread, and measures of prevention. In his paper of 1930 Pickles concluded that the incubation period varied from 26 to 35 days, that the period of infectivity was probably short, and that the method of spread was respiratory from case to case. Apart from Glover and Wilson,[10] who, as the result of their observations of an explosive outbreak in a small country town, gave the incubation period as 3 to 4 days, most observers agree that the period is a long one. Newman's[5] instances of the schoolmaster, "Mr. Raven," who went to school while feeling ill and left the same day, infecting four children at school as well as his wife, made it fairly certain that incubation periods in these cases were 24, 29, 30, and 31 days respectively. An incubation period of from 3 to 5 weeks was given by McFarlan.[11] In the institutional outbreaks recorded by Hallgren the statistical range of the incubation period was 34 to 52 days, although periods as short as 28 days were actually observed. The duration of infectivity is uncertain. According to Lisney[12] patients are infective during the incubation period; Pickles believes that the infective period is usually short and that isolation of the sick person for a fortnight is long enough.

The observations of numerous careful workers show that infection spreads mainly as a result of contact. That cases appear in crops argues against water-borne or milk-borne infection. But only "the most casual contact" was noted

1 *British Medical Journal*, 1937, **1**, 67.
2 *Quart. J. Med.*, 1912, **6**, 1.
3 *Guy's Hosp. Rep.*, 1934, **84**, 173.
4 *British Medical Journal*, 1940, **2**, 197.
5 Ibid., 1942, **1**, 61.
6 Ibid., 1942, **2**, 446.
7 *Acta med. scand.*, 1942, Supplement 140.
8 *Quart. J. Med.*, 1943, **12**, 139.
9 *British Medical Journal*, 1930, **1**, 944.
10 *Lancet*, 1931, **1**, 722.
11 *Publ. Hlth.*, 1941, **55**, 56.
12 *British Medical Journal*, 1937, **1**, 703.

by Bashford,[13] and Newman[5] points out the difficulty of explaining serial infection in families on the basis of droplet or air-borne infection. Evans,[6] noticing the frequency with which nurses became infected by looking after patients, suggested that the virus may be present in faeces or urine. In this connexion Hallgren[7] gives evidence of the spread of infection by contaminated water. Here the characteristic of the epidemic in a sanatorium with a population of about 550 was its explosive nature. When the local water supply was investigated it was found to be contaminated by a leak from the main sewer. When this contamination was brought under control the epidemic ceased. No case of jaundice or hepatitis was found among the pigs raised on the offal from the sanatorium kitchen, and indeed there is little evidence to support Andersen's suggestion[14] that the pig may act as the animal host for an epidemic of infective jaundice. It may be recalled that in the water-borne epidemic of "catarrhal" jaundice described by R. Fraser[15] the jaundice outbreak was preceded by an outbreak of gastro-enteritis 2 or 3 weeks before, affecting practically all of 620 students. Hallgren also mentions that epidemics of jaundice in diabetic clinics may have been caused by inoculation with infected instruments in the laboratory. Bigger[16] has suggested that epidemics of jaundice in V.D. clinics may be due to the transmission of the virus from patient to patient in the syringes used for injecting arsenic preparations. Nevertheless it should be remembered that patients in clinics come into close contact with each other, and that both diabetics and syphilitics have vulnerable livers. It seems, therefore, that infective hepatitis usually spreads from case to case, and also that occasionally the virus may find its way into the water supply, giving rise to explosive outbreaks of infection. In this connexion the efficacy of methods of water purification in controlling virus infections may well be reviewed.[17]

ANTIDOTES TO ARSENIC

There has lately been an increase in the number of patients suffering from symptoms of arsenical intoxication as a result of antisyphilitic treatment. The first published work which indicated the mechanism of arsenical poisoning was that of Voegtlin, Dyer, and Leonard[18] in 1923; they showed that the action of arsenic on protoplasm was due to organic sulphur compounds containing the sulphur in the mercaptan or sulphydryl form (−SH). Neoarsphenamine is probably converted in the body into the arsenoxide form, R.As=O, and Voegtlin and his colleagues showed that the action of arsenoxide on trypanosomes, both in the test-tube and in the living rat, was inhibited by adding sulphydryl compounds such as cystein or glutathione. Later the same workers[19] demonstrated that the toxic action of arsenoxide for the rat itself was inhibited by the intravenous injection of glutathione in the reduced form. The toxic action was also lessened by feeding rats on a mixture of glutaminic acid and cystine, which are the constituents of glutathione. The conclusion from these observations is that when compounds containing sulphydryl groups are administered, arsenic which is present in the body combines with these sulphydryl groups rather than with the sulphydryl groups of protoplasm.

These observations are probably related to the demonstration by Messinger and Hawkins[20] in 1940 that a meat diet is very effective in protecting dogs against the toxic action of arsenic on the liver, and that a fat diet, on the other hand, conduces to toxic effects. For example, one dog eating a high fat diet became toxic and inactive with a high icteric index after the injection of 0.04 g. per kg. arsphenamine. When a protein diet was substituted the icteric index fell and the dog became active. Three more arsphenamine injections were then given, but in spite of these the bilirubinaemia fell and the dog remained well. It was then put back on the fat diet, when the icteric index rose from 2 to 21 units without more arsphenamine. A protein diet has similarly been shown to protect the liver of a dog against chloroform, and it is the sulphur-containing amino-acids in the protein which give the protection[21]; it may be these amino-acids which protect against arsenic. It should be remembered that casein contains relatively much cystine.

A new approach has recently been made by Sandground and Hamilton,[22] who were stimulated by the observation of Woods[23] that *p*-aminobenzoic acid inhibits the action of sulphonamides on bacteria. Sandground and Hamilton wondered whether *p*-aminobenzoic acid would inhibit the action of pentavalent arsenicals such as tryparsamide on trypanosomes. They looked for this action, failed to find it, but discovered that *p*-aminobenzoic acid greatly reduced the toxicity of large doses of tryparsamide, carbarsone, acetarsone, and other pentavalent arsenic compounds. For example, 1.5 g. per kg. carbarsone killed all rats; but if this dose was followed by oral administration of 0.75 g. per kg. *p*-aminobenzoic acid, repeated twice on successive days, all rats survived. Some protective action could be demonstrated with doses so low as 15 mg. per kg. The protection afforded by *p*-aminobenzoic acid was greatest when it was administered either together with carbarsone or one hour previously; the protection was less if *p*-aminobenzoic acid was given after the carbarsone. Similarly, *p*-aminobenzoic acid gave good protection against arsanilic acid if it was given three hours before. Sandground considers that the protective action is due to *p*-aminobenzoic acid interfering with the reduction of the pentavalent arsenicals to the arsenoxide form, inasmuch as *p*-aminobenzoic acid has very little protective action against the trivalent arsenical compounds like neoarsphenamine, or against arsenoxides like mapharsen. Mapharsen, it is interesting to note, is rapidly replacing neoarsphenamine as an antisyphilitic remedy in the United States; probably more than half the cases in the U.S. Army are treated with mapharsen.

Still further work from another source has now been published. Goldstein, Stolman, and Goldfarb[24] state that

[13] *Lancet*, 1934, **2**, 1008.
[14] *Acta med. scand.*, 1942, Supplement 140.
[15] *Canad. publ. Hlth. J.*, 1931, **22**, 396.
[16] *Lancet*, 1943, **1**, 457.
[17] See Annotation, *British Medical Journal*, 1943, **1**, 545.
[18] *Publ. Hlth. Rep.*, Wash., 1923, **38**, 1882.
[19] *J. Pharmacol. exp. Therap.*, 1925, **25**, 297.
[20] *Amer. J. med. Sci.*, 1940, **199**, 216.
[21] Ibid., 1942, **203**, 477.
[22] *J. Pharmacol. exp. Therap.*, 1943, **78**, 109, 203, 209.
[23] *Brit. J. exp. Path.*, 1940, **21**, 74.
[24] *Science*, 1943, **98**, 245.

methyl chalcone of hesperidin reduces the toxicity of mapharsen for rabbits. These workers were concerned to find a remedy for the encephalopathy which has occurred in 1.3% of patients treated for syphilis with mapharsen by the rapid 5-day method. Goldstein and Stevenson observed that mapharsen in large doses damaged the brain capillaries of rabbits, and Goldfarb proposed the use of an aqueous extract of whole lemon to prevent arsenical encephalopathy. Lemon was believed to contain the factor diminishing capillary permeability known as vitamin P. Later a chalcone of hesperidin (a vegetable dye having vitamin P activity) was isolated from lemon peel, from which was prepared a methyl chalcone. Goldstein and his colleagues have now used this methyl chalcone in conjunction with mapharsen, and state that it gives some protection against the toxic effect of large doses of mapharsen. Mapharsen in doses of 8 mg. per kg. twice daily for 4 days killed 13 out of 30 rabbits. If, however, the methyl chalcone was given intravenously daily for 7 days before and for 4 days during the mapharsen injections, in doses of from 10 to 30 mg. per kg., then only 3 rabbits out of 30 died. These experiments are, however, still in the preliminary stage.

Of the three lines of work described, the first seems the one most likely to have a clinical application, though the second might also be tried. Both compounds, like cystein, containing sulphydryl groups and *p*-aminobenzoic acid are fairly easy to obtain, and both might be tried as remedies for arsenical dermatitis or for arsenical jaundice. Let us hope that this is being done.

MEDICAL HISTORY OF THE WAR

Sir Arthur MacNalty's paper on the Official Medical History of the War,[1] like all his writings, is both scholarly in substance and literary in form. That he should be editor-in-chief of the projected History is one good omen of success in an undertaking all the prognostic signs of which are not equally encouraging. The scale of the plan is vast: the medical history of the last war, which was mainly a history of the R.A.M.C., ran to 12 volumes: the History of this war is to cover not only the three fighting Services but the medical civilian services as well. As there are few human activities of medical interest which a state of "total" war does not affect, the programme envisages a virtually complete medical history of the civilian population of Great Britain and Northern Ireland as well as of the fighting Services in all parts of the world through a period inevitably longer than 1914–18. This suggests a series of volumes in comparison with which the 12 volumes edited by Sir William Macpherson will seem curt. The youthful Macaulay said of a voluminous author: "Such a book might, before the deluge, have been considered as light reading by Hilpa and Shallum. But unhappily the life of man is now threescore years and ten; and we cannot but think it somewhat unfair in Dr. Nares to demand from us so large a portion of so short an existence." But nobody expects that any individual will read the whole series; the object is, presumably, to lighten the labours of specialists who must otherwise consult original documents, some of which will be inaccessible and others destroyed. It might therefore be suggested that many items of the programme ought to be treated by the official writers rather in the spirit of guides than of formal historians. For instance, the history of civilian mortality rates during the war must be written by the expert staff of the General Register Office. Now, reasons of alleged security have restricted the literary output of the General Register Office; but, sooner or later, all the facts must be set out and commented on in the regular serial publications. No doubt a competent person could use this material to compile a volume of the History, but that would mean not only great repetition but a presentation of the facts out of the appropriate setting. A fascicule, rather than a solid volume, consisting of an annotated bibliography (including manuscripts as well as printed sources), would in our view be the appropriate method. This is probably true of other parts of the programme. It is easy to make the better the enemy of the good. One recalls Mr. Casaubon of *Middlemarch*. We have no doubt at all that the editorial committee are as learned as and much more intelligent than George Eliot's character, but it is possible that by 1956 (the last volume of the medical history of 1914–18 appeared in 1931) interest in the details of the present war will have waned; it might even be that they did not seem to have much relevance to future wars. If so, general readers would only be attracted by the merit of the writing. The song is always of arms *and* the man. Let us at least hope that the editor-in-chief, or some colleague with a comparable literary gift, will write *one* volume which will convey a general impression. Experts have decided that J. R. Green's little book contained various errors and did not give a wholly correct account of forces and tendencies. Macaulay has been convicted of still graver faults. But most of us feel more grateful to Green and Macaulay than to the learned contributors to accurate but much longer and far duller works by specialists.

[1] *J. R.A.M.C.*, 1943, **81**, 51.

TRICRESYL PHOSPHATE POISONING

In a small popular handbook of to-day[1] there is a description of the "Plastic Man" in the future "Plastic Age," from his nursery full of bright unbreakable objects, through a dustless, rustless world, to his final hygienic enclosure in his inexpensive moulded coffin. Already the "plastics" and "plasticizers" used in modern industry are legion. They enter into the manufacture of such diverse articles as gun turrets and babies' rattles; machine housings and lipstick cases; aircraft dopes and microscope mounting materials. Their smooth clearness reveals no hint of danger to those who either make or use them. Yet the raw materials of many plastics are dissolved in solvents of known and unknown toxicity, and added to them are complex lubricants, or plasticizers, of similar potential capacity for injury. One such plasticizer—tricresyl phosphate—has recently been incriminated as both a systemic poison and an external irritant.

Tricresyl phosphate and the closely allied compound triphenyl phosphate belong to the chemical families known as the aliphatic and aromatic esters. They are of low volatility, and their function as plasticizers is that of increasing the stretch and decreasing the brittleness of plastic materials. One of the first intimations of the toxic action of tricresyl phosphate arose from its use as a denaturant in a cheap alcoholic extract of Jamaica ginger—the "jake" beverage of prohibition days. An outbreak of "ginger paralysis" in Cincinnati in 1930 affected more than 2,000

[1] *Plastics*, by V. E. Yarsley and E. G. Couzens, Pelican Books, 1941.

people within six months. A similar outbreak in Durban in 1937 was traced to the use of cooking oil transported in drums which were believed to have been used for storing commercial plastics: the oil was found to contain 0.2 to 0.3% of tricresyl phosphate. Yet another source of poisoning by ingestion of tricresyl phosphate has been found in "apiol pills" containing 28 to 50%. In 1942 the occurrence of a few cases showing similar symptoms in workers employed in the manufacture of tricresyl phosphate led to an Order under Section 43 (3) of the Workmen's Compensation Act adding poisoning by tricresyl and triphenyl phosphate to the Schedule of Industrial Diseases.

The symptoms of systemic tricresyl phosphate poisoning closely resemble those of infantile paralysis, but are in fact due to severe polyneuritis with disability especially in the motor functions. An initial few days of gastro-intestinal disturbance, which represents the accumulation of a final paralysing dose, is followed by a latent period of eight to twelve days, during which there is believed to develop a hyperplastic fibrosis of the smaller arteries and capillaries, and finally paresis, affecting first the calf muscles and later the intrinsic muscles of the hands. The gait has a typical "slapping" character, and there are numbness and tingling of the feet and hands. Recovery is slow. Often there is little change up to eighteen months, and residual paralysis after three years is not uncommon.

Even more recently suspicion has fallen on tricresyl phosphate as the causal agent in a form of dermatitis associated with the wearing of synthetic tortoiseshell spectacles. This takes the form of itching and serous discharge behind the ears, with slighter reactions over the bridge of the nose and at points of contact with the side-pieces. In similar cases reported by Berkhoff[2] in 1938 it was believed that the irritant was tricresyl phosphate used as a plasticizer in the synthetic tortoiseshell. Some amateur medical detective might perform a service to humanity by following the trail of the spectacle frames from patient to supplier, from supplier to manufacturer, back to the original plastic and plasticizer. The final tracing and enumeration of all articles made by this particular process might lead to the elucidation of many mysterious cases of sensitization dermatitis of unknown origin.

PATULIN AND THE COMMON COLD

The great therapeutic success of penicillin has led to the examination of hundreds of mould species for their capacity to produce similar antibacterial agents. A large number, particularly of the genera *Penicillium* and *Aspergillus*, have been found to produce such agents. But without exception they fall short of penicillin both in bacteriostatic power and in freedom from toxicity. They belong to two main classes: those which, like penicillin, act almost exclusively on Gram-positive bacteria, and those which act equally on Gram-positive and Gram-negative. H. Raistrick has identified a large number of these substances, and has chemically identified and even synthesized some of them. They are readily produced, since the yield from mould cultures is large and stable: these are advantages over penicillin which would facilitate therapeutic use should any such scope be found for their employment. It is such a mould product which is now acclaimed for a totally unexpected purpose—the cure of the common cold. The circumstances in which this discovery was made are strongly reminiscent of those which originally led to the identification of penicillin itself, both involving a large element of chance which might have gone for nothing without the vision and capacity to seize it. A supply of patulin, the antibacterial derivative of *Pencillin patulum* Bairier, had been sent to the laboratories of the Imperial Cancer Research Fund for therapeutic tests in cancer. We are not told the results of any such tests, but W. E. Gye was suffering from a severe cold when the material was received, and tried a solution of it as a nasal douche with marked relief. Some of his colleagues having confirmed this effect in their own persons, a large-scale clinical trial was carried out by W. A. Hopkins at a Naval establishment. Here sufferers from colds were treated either with a solution of patulin in phosphate buffer or with phosphate buffer solution alone, the subjects in no case knowing that any control material was being used, while in some experiments not even those in direct charge of the treatment knew which solutions were active and which not. It was found best to classify results simply into "cured within 48 hours" or "not cured": they varied somewhat during the three months covered by the study, but the mean figures for the whole period were 58% of recoveries in treated cases, and 9.4% in controls. These clinical observations, together with an account of patulin from the chemical point of view by Raistrick and his colleagues, and information about its other biological properties, have now been published (*Lancet*, Nov. 20, 1943, p. 625) in a symposium which has naturally produced loud echoes in the lay press.

The main impression which these disclosures produce is one of astonishment that a substance with these properties should have any such action. Patulin is toxic: 0.5 mg./20 g. intravenously kills 65% of mice, and a concentration of 1 in 2,000 inhibits phagocytosis. The concentrations inhibiting the growth of various bacteria, Gram-negative as well as Gram-positive, are mostly between 1 in 33,000 and 1 in 100,000. The concentrations recommended for therapeutic use are 1 in 5,000 or 1 in 10,000. It is true that this strength leaves a favourable margin from both points of view—toxicity and bacteriostasis—but it is a very narrow margin. It has also to be remembered that the majority of colds are believed to be due to a virus, and that there is no evidence whatever that any mould product has an inhibitory action on the growth of viruses. That the effect on the cold is directly antimicrobic is therefore perhaps improbable; it is certainly unproved. A merely vasoconstrictor or antisecretory effect seems unlikely in view of its duration: six hours of complete relief from symptoms is a common experience after one application, and four-hourly repetition is all that has been found necessary. Nevertheless patulin clearly calls for investigation from the purely pharmacological point of view. What other type of action it may have is simply an interesting field for sheer speculation. While welcoming what is evidently a great advance, offering the prospect at least of some relief from discomfort on an enormous scale, we would suggest that, besides the further clinical trials envisaged, serious attempts should be set on foot to elucidate the process involved. With better understanding it may prove to have even wider implications.

The authorities of the Royal Infirmary, Worcester, have set up a Hastings Memorial to mark the bicentenary of the hospital. The Council of the B.M.A. at its meeting on July 28 recorded its high appreciation of the proposal. The memorial takes the form of an overmantel in oak for the board room in which are incorporated the existing portrait of Sir Charles Hastings and the reproduction of his address delivered to the first meeting of the Provincial Medical and Surgical Association, which became the British Medical Association in 1856.

[2] *Arch. Derm. Syph.*, 1938, **38**, 746.

RESPIRATORY TUBERCULOSIS

EFFECT OF THE WAR ON THE LENGTH OF THE INTERVAL BETWEEN NOTIFICATION AND DEATH

BY

E. LEWIS-FANING, B.Sc.Econ., Ph.D.

Of the Statistical Staff of the Medical Research Council

Among many factors that have been suggested as influencing the increase in tuberculosis mortality which accompanied the outbreak of the war is that of lowered resistance to the disease by those already infected. It is argued that if resistance were lowered to the point at which the average duration of the disease was shortened, this would tend to produce the higher mortality rates that were a feature of the 1940 and 1941 statistics.

Method of Investigation

The medical service of the Middlesex County Council, realizing the desirability of answering this question, offered for statistical analysis their records of fatal cases terminating in the years 1937 to 1941. The method of approach to the problem has been to compare the interval between notification and death for two periods in which death occurred: (1) the pre-war years 1937–9, and (2) the war years 1940 and 1941. Shorter average duration should appear in the second period if the postulate of the preceding paragraph is correct. The term "duration of disease" as used in this analysis is defined as the time elapsing between notification (or registration as an infected person) and death.

The data are not complete; only about 75% of the deaths recorded in the County of Middlesex by the Registrar-General during these five years appear to have come under the county council's scheme for the treatment of tuberculosis.* Of the remainder a number of persons escape notification as suffering from tuberculosis until after death; and a further proportion, who were notified, were treated privately and not under the county service. It can be shown that the proportion who escaped the net was constant in both periods, and hence the comparison is not invalidated even though the accuracy of the figures as measures of the absolute duration of the disease is somewhat reduced.

* A similar test could be applied by all tuberculosis centres to furnish a rough guide as to the extent to which tuberculosis cases in any administrative area were seen by the official medical service.

Analysis of the deaths in the pre-war period shows that the missing data were not distributed by age in the same proportions as the deaths officially recorded. According to official figures, 43% of the male deaths were at ages over 45, yet 72% of the male leakage occurred at these ages. Again, 20% of the recorded female deaths were at ages above 45, yet the female leakage was 41% in the same group.

Returns were submitted by each of the seven chest clinic or dispensary areas into which, during the period under review, the county was divided for the purpose of administering the tuberculosis service. The information supplied in each fatal case was: Sex, age at death, date first seen by the tuberculosis officer, whether diagnosis was of pulmonary tuberculosis or tuberculosis of other organs, and date of death. The analysis was restricted to deaths due to pulmonary tuberculosis, since there was not sufficient material from which to make satisfactory deductions in regard to the other forms. Two dispensaries supplied the date of notification instead of the date first seen, but exhaustive comparisons between the results given by these two areas as compared with the remainder showed no differences which could be ascribed to the distinction made.

The data were carded and the durations calculated to the nearest month. The frequency distributions in broad duration groupings, in both absolute and percentage form and distinguishing age and sex, are shown in Table I; also the percentage age distribution at death of these fatal cases.

TABLE I.—*Pulmonary Tuberculosis: Middlesex County Council's Data. Distribution of Fatal Cases according to Age and Duration.** *Fatal Cases terminating in 1937–9 compared with those terminating in 1940–1*

Durations in Years	MALES											
	Age Groups (Age at Death)											
	Under 25		25–		35–		45–		55+		All Ages	
	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1
	%	%	%	%	%	%	%	%	%	%	%	%
Under 1	109 (41)	78 (41)	111 (37)	77 (39)	117 (43)	78 (40)	111 (46)	87 (45)	93 (49)	78 (47)	541 (43)	398 (42)
1–	124 (47)	85 (45)	153 (51)	90 (45)	111 (41)	81 (42)	100 (42)	69 (35)	73 (38)	65 (39)	561 (44)	390 (41)
5+	32 (12)	26 (14)	39 (13)	33 (17)	46 (17)	36 (19)	28 (12)	39 (20)	24 (13)	22 (12·6)	169 (13)	156 (17)
All durations	265	189	303	200	274	195	239	195	190	165	1,271	944
Percentage age distribution	20·8	20·0	23·8	21·2	21·6	20·7	18·8	20·7	14·9	17·5	99·9	100·1

Durations in Years	FEMALES									
	Age Groups (Age at Death)									
	Under 25		25–		35–		45+		All Ages	
	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1	1937–9	1940–1
Under 1	161 (45)	128 (48)	119 (38)	90 (41)	47 (35)	44 (45)	57 (47)	41 (50)	384 (41)	303 (46)
1–	152 (43)	113 (43)	155 (49)	99 (45)	68 (50)	40 (41)	51 (42)	23 (28)	426 (46)	275 (41)
5+	44 (12)	25 (9)	42 (13)	32 (15)	21 (15)	13 (13)	13 (11)	18 (22)	120 (13)	88 (13)
All durations	357	266	316	221	136	97	121	82	930	666
Percentage age distribution	38·4	39·9	34·0	33·2	14·6	14·6	13·0	12·3	100·0	100·0

* Duration is defined throughout this paper as the period elapsing between notification (registration as a tuberculous person) and death.

Findings

Age Distribution.—Statistical tests showed no significant difference between the age distributions in the two periods.

Duration Distribution (All Ages).—Considering first all ages combined, Table I shows that in the three years 1937 to 1939 1,271 deaths of males occurred from pulmonary tuberculosis among patients under observation by the Middlesex Tuberculosis Service, as against 944 in the two-year period 1940–1. In the pre-war period the duration was of less than one year in 43% of the deaths, as compared with 42% in the war period. Those with durations of more than one year but less than five years accounted for 44% in the pre-war and 41% in the war years; while there were 13% in the pre-war and 17% in the war years with durations ranging from five to twenty-six years. Similarly for females, 41% of the 930 deaths in 1937–9 and 46% of the 666 deaths in 1940–1 were of less than one year's duration; 46% as against 41% were of more than one but less than five years; and 13% in both periods

recorded durations of more than five years. For neither sex were the distributions in the two periods different in the statistical sense; or, in other words, the changes which occurred in the percentages were not greater than one would expect to arise merely by chance.

Durations within the Age Groups.—Statistical tests* applied to the frequency distributions of the durations within the age groups showed that only at ages 45–54 for males and at ages 45 and upwards for females were they really dissimilar in the two periods. In both cases the proportion of patients with a duration of over five years increased in 1940–1. Certain features of the table were suggestive, but when tested statistically were found to be inconclusive.† These were: (*a*) an increase in 1940–1 in the proportion of male deaths with durations longer than five years, the amount of increase being small but persisting at every age group; and (*b*) a similar small but consistent increase in the proportion of female patients with durations of less than one year, accompanied by a decrease, except at ages under 25, in the proportion with durations of one to five years.

One other point is perhaps noteworthy even though it is hardly relevant to the present problem. The proportion of cases in which death occurred less than a year after notification showed for males the same relationship with age in both periods—namely, that it was lowest at age group 25–34 and thereafter increased with age. This was also true of the female patients in the more recent period, but in 1937–9 the smallest proportion occurred in age group 35–44.

Average Length of Duration.—A comparison between the pre-war and war years as regards average length of duration, in age groups, is shown in Table II. Separate indices are given for the duration groups used in Table I, since the mean for all durations combined appeared to be unduly influenced by a few long-drawn-out cases. The difference between each pair of means was tested for statistical significance, and the table shows the ratio of each difference to its standard error—15 values for males and 12 for females. Of the former, in only two instances was the ratio greater than 2, and only in those two instances could it be concluded that the difference was greater than could arise by chance. Neither instance is, however, evidence that average duration *decreased* with the outbreak of war, but suggests the contrary. Four significant differences occurred among the 12 pairs of means for the females, and they all arose in the duration group in which death occurred within one year after notification. But while three showed the average duration in 1940–1 to be less than in 1937–9, the fourth recorded an increase, and statistical tests indicated that no definite deductions could be drawn from these results.

Conclusions

The analysis has produced no conclusive evidence of any appreciable decrease in the average length of time between notification and death from pulmonary tuberculosis in the two years following the outbreak of war. Nor do the results, presented in three groups according to whether death occurred within one, five, or more years after notification, show the existence of any movement to indicate that during the war years a higher proportion of the deaths occurred at a relatively shorter interval after notification.

There is perhaps a suggestion, which statistically is unproved, that among female patients in the more acute group—those dying within a year of notification—the average duration was a few weeks less in 1940–1 than in 1937–9.

The conclusion must be, therefore, that there is no evidence, from the experience of the tuberculosis service of the County of Middlesex, of a lowered resistance to the disease to the point at which duration was shortened, and hence no evidence that lowered resistance was a causative factor in the increase of tuberculous mortality which occurred in 1940–1.

My acknowledgments are due to the staff of the Middlesex County Medical Service for the assistance they have given in connexion with the preparation of this paper.

TABLE II.—*Deaths from Pulmonary Tuberculosis in the County of Middlesex. Average Duration, from Notification (or Date first seen by T.O.) until Death (in Months)*

MALES

Duration Group (in years)	Under 25			25–			35–			45–		
	1937–9	1940–1	Diff. S.E.	1937–9	1940–1	Diff. S.E.	1937–9	1940–1	Diff. S.E.	1937–9	1940–1	Diff. S.E.
Under 1 ..	5·2±0·30	5·3± 0·37	+0·13	5·6±0·31	5·1±0·38	−0·96	4·8±0·29	4·5±0·35	−0·49	4·3±0·30	3·9±0·32	−0·98
1–	30·5±1·16	29·1± 1·30	−0·86	29·6±0·99	33·1±1·32	+2·15*	30·8±1·27	31·2±1·45	+0·23	29·6±1·38	28·4±1·38	−0·61
5+	80·8±4·24	111·5±10·91	+2·62*	101·0±6·76	92·6±6·69	−0·88	106·2±7·05	109·5±8·28	+0·31	102·4±6·96	111·2±7·26	+0·87

Duration Group (in years)	55+		
Under 1	4·2±0·33	4·1± 0·36	−0·25
1–	26·7±1·60	30·5± 1·63	+1·68
5+	110·5±9·35	128·5±13·63	+1·09

FEMALES

	Under 25			25–			35–			45+		
Under 1 ..	5·8±0·23	5·0±0·28	−2·14*	6·5±0·31	5·3±0·34	−2·65*	4·6± 0·46	6·0±0·51	+2·01*	5·3± 0·45	3·8± 0·43	−2·38*
1–	26·6±0·89	27·2±1·14	+0·41	29·3±1·00	29·6±1·32	+0·17	29·1± 1·52	30·0±2·10	+0·35	26·4± 1·74	28·3± 2·50	+0·62
5+	87·7±4·41	82·0±3·51	−1·02	88·6±3·57	91·1±4·34	+0·45	103·6±11·31	93·9±9·34	−0·66	114·2±19·12	106·0±10·36	−0·38

*=Significant difference.

* The results of the statistical tests applied may be summarized:

Age Group	Males			Females		
	χ^2	Degrees of Freedom	P	χ^2	Degrees of Freedom	P
Under 25 ..	0·34	2	0·87	1·50	2	0·49
25–	1·98	2	0·37	0·93	2	0·63
35–	0·42	2	0·84	2·75	2	0·26
45–	6·00	2	0·05	6·81	2	0·03
55+	0·10	2	0·96			
†Additive χ^2	8·84	10	approx. 0·60	11·99	8	approx. 0·20

The report on health centres presented by request to the Manchester Public Health Committee by the city's medical officer of health, Dr. C. Metcalfe Brown, is concerned with centres for those health services now administered by local authorities, and not with health centres for group medical practice. Assuming a population of 750,000 divided into 15 units of about 50,000 persons, Dr. Metcalfe Brown suggests that each unit should have one main and four subsidiary health centres, each of the latter serving 10,000 persons. The plan for a main health centre (with excellent drawings), which is included in the report, provides accommodation on the ground floor for a maternity and child welfare section with ante- and post-natal clinics and milk sales department, the school medical service, venereal diseases clinic, and accident department; on the second floor for dental, *x*-ray, skin, orthopaedic, physiotherapy, and pathological departments; and on the third floor for the medical staff, medical records, health visitors, etc. It is suggested that wherever possible an additional site adjacent to the centre should be reserved "to accommodate the comprehensive general medical services of the city."

Reports of Societies

CANCER AND THE YOUNG GYNAECOLOGIST

In his presidential address to the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on Oct. 15 Dr. MALCOLM DONALDSON addressed himself to the subject of malignant disease, more particularly from the standpoint of the younger generation of gynaecologists. He reminded them that cancer was a research subject calling for team work. In order to take his or her place in the team the young gynaecologist not only must be good in this special branch of practice and an expert surgeon but must have a considerable knowledge of radiotherapy, and be able to take an intelligent interest in advances in the histology, pathology, and aetiology of the disease.

After pointing out that all treatment of cancer, whether for private or hospital patients, should be carried out in a well-equipped and properly staffed institution, Dr. Donaldson dwelt upon the importance of early diagnosis and the value of educational lectures to the laity. Again and again it was said, "If only this patient had sought medical advice earlier we should have had a chance," but very little had been done to remedy this state of affairs. It was complained that the lectures organized by the British Empire Cancer Campaign were likely to turn people into neurasthenics; he was convinced that the exact opposite was true. As soon as people began to talk freely about cancer in the same way as they talked about other diseases it would be possible to do away with the fear and ignorance which were so largely responsible for the late diagnosis of cancer even in accessible sites. Unfortunately, even when early diagnosis was obtained, the good was often nullified by the fact that the patient's name was put on a waiting list, and, if the gynaecologist was not interested in cancer, the name would remain on the list for weeks before the patient was admitted. Cancer should be regarded as an acute disease, and waiting lists as a blot on civilization.

Dr. Donaldson went on to discuss the difficulties of treatment, in particular the assessment of the effect that treatment had on a growth. He drew attention to the criterion suggested by Spear and Glücksmann which would make it possible within a few weeks of the start of treatment to assess the effect on the primary growth. This method consisted in counting the entire cell population of an area of tissue taken from the growing edge of the growth before and after irradiation, and then determining the number of cells in each of four categories—namely, dividing, degenerating, resting, and differentiating cells. By plotting the results as percentages against time on a graph, it had been found that the curves showed certain characteristics by which the effectiveness of the irradiation could be judged.

The manner in which radiotherapy brought about certain results had been studied for many years. At one time it was thought that radium or *x* rays acted as a kind of cautery—"a red-hot poker," as one surgeon expressed it—but it was soon realized that cancer and other quickly growing tissues were more sensitive to radiotherapy than normal ones. The outstanding fact was that large growths were usually more difficult to eradicate than smaller ones, in spite of the fact that each individual cell in both classes of tumour received the same amount of irradiation; thus an indirect action was suggested, and this indirect action, in his view, was the more important factor. The young gynaecologist must search for an optimum dose of irradiation which would encourage differentiation. Possibly a large dose might have the opposite effect.

Treatment by radiotherapy had improved during the last few years, but some practitioners still used radium or radon with very little knowledge of the subject. The bad results of treatment, so often due to ignorance, did not appear at once, and mistakes in technique were therefore not so obvious to the practitioner as bad surgery would be.

The Cancer Act

After stressing the need for more research work on the subject of pain in advanced cases of cancer, Dr. Donaldson spoke finally of the future organization in which the young gynaecologist was likely to play his or her part. He believed that the Cancer Act of 1939 would prove to be one of the very greatest benefits in helping to solve the cancer problem. The Act itself was short and rather unimpressive, but everything would depend on the way it was carried out. It compelled certain of the local authorities to submit schemes to the Ministry of Health which would provide efficient diagnosis and treatment for cancer patients within their areas. It did not require each local authority to have a separate scheme; on the contrary, powers were provided to compel the setting up of joint schemes where these were desirable. The Act also compelled local authorities to consult with the voluntary hospitals and other medical bodies within their boundary. As most of the treatment of cancer had been, and was being, carried out in the voluntary hospitals, the Act provided a golden opportunity for the voluntary hospitals to get together and draw up schemes which would also embrace municipal hospitals and their services, and provide a first-class cancer organization. He believed that any large hospital which decided to adopt an isolationist policy would eventually lose all its cancer patients. Such schemes would provide for diagnostic and consultative centres, treatment after consultation between surgeon and radiotherapist, efficient follow-up departments, statistical departments, educational lectures to the public, and a number of other services in connexion with cancer. In a word, they would offer far more efficient routine treatment than was obtained at present by most patients, and an ever-increasing opportunity for planned research.

EPIDEMIOLOGY OF POLIOMYELITIS

At a meeting of the Section of Neurology of the Royal Society of Medicine on Oct. 21, with Brig. HUGH CAIRNS in the chair, the subject for discussion was the present position with regard to the epidemiology of poliomyelitis.

Prof. S. P. BEDSON said that up to a few years ago it was accepted that the primary focus of infection of poliomyelitis was in the nasopharynx. The virus of poliomyelitis was a confirmed neurotrope—that was to say, it developed only in the nerve cells. It was found in the central nervous system, in the nasopharynx, in the stools, and nowhere else. Of the less artificial means of producing infection in the monkey the application of the virus to the olfactory mucosa was most likely to succeed. It had also been found that if the olfactory mucosa had been prepared by chemical treatment such as zinc sulphate, then the monkey became insusceptible to infection by the nasal route. No one to-day contested the accuracy of those observations, and it had to be admitted that the conclusions drawn from them were neither unreasonable nor illogical. Even the occasional spread of poliomyelitis by milk, for which there was some evidence, was not out of keeping with the conception of this disease being spread by infected droplets, since in a condition like scarlet fever, which was a droplet-spread disease, milk-borne outbreaks occurred. One feature of the epidemiology of poliomyelitis which did not fit in with this conception was the seasonal incidence. Poliomyelitis was a disease of late summer and early autumn, unlike droplet-spread infections, which were diseases of winter and early spring. In support of the alimentary tract hypothesis was some experimental evidence that the monkey could be infected by injecting the virus into the intestinal submucosa, though some critics had held that the method was too artificial to give indications of value in the aetiology of the naturally occurring disease. Further work in recent years, however, had gone far to establish the view that infection entered by the alimentary tract. In the Toronto epidemic of 1937 a 1% sulphate spray was given a thorough trial and was found to have no preventive value. Recent studies in America had shown that, with an adequate technique, the virus of poliomyelitis could be demonstrated in the stools in human cases with remarkable regularity. Moreover, the virus had been isolated from the sewage in communities in which poliomyelitis was epidemic. Five out of 19 specimens collected from sewage in the neighbourhood of hospitals where poliomyelitis cases were being nursed showed positive results. Samples collected beyond a certain distance from the hospital or after the epidemic had ceased, or samples examined more than 24 hours after collection, gave negative results, suggesting that the virus

was destroyed fairly rapidly. The recognition of the importance of the alimentary tract as a portal of entry of infection necessitated a recasting of views on the epidemiology and on control measures.

Poliomyelitis in Malta

Prof. H. J. SEDDON gave a description of the poliomyelitis encountered in Malta during the bombing and siege of the island. The people of Malta during this period had lived in shelters and rock tunnels under very overcrowded conditions and in a state of poor nutrition; but the epidemic spread to the neighbouring island of Gozo, where there was no bombing and where there was plenty of food. The epidemic, which occurred just after the relief of Malta, affected about 400 children and about 60 men in the Services. The children affected were mostly in the 0–5 age group (368 cases); in the 5-10 age group there were only 23 cases, and in higher age groups it was negligible. The Services epidemic affected only British and Dominion troops; none of the Maltese troops were affected, and the epidemic began rather later than the civilian one.

The outbreak threw a great strain upon the hospitals; a further difficulty was the fatalistic attitude of the parents, who would not bring their children up for examination, so that it was necessary to tour the island and examine the children in their own homes, which were often no more than holes in the rock. In these circumstances accurate muscle-charting was not easy. Through the co-operation of the Royal Air Force some good duralumin was obtained, also some spongy rubber salved from German aircraft, and in that way a sufficiency of splints was provided. A severe outbreak of scabies complicated the picture, and it often took a long time to get the children clean enough for ordinary massage. About one-third of the children made a good recovery within four months. The incidence of serious crippling was between 25 and 33%. There were 27 cases of abdominal paralysis, and a 10% incidence of facial palsy. Unless the children were watched very carefully they were liable to develop scoliosis. The mortality due to poliomyelitis alone among the children was 3.52%, and due to poliomyelitis associated with other conditions 2.77%.

As for epidemiological factors, the epidemic occurred at a time when the worst of the overcrowding was past. Overcrowding did not appear to be a serious factor in causation. The families in which the cases arose were investigated from the point of view of overcrowding. In some cases there might be seven or even ten people together in one room at night, yet the number of poliomyelitis cases occurring in these overcrowded families was quite small—almost invariably only one child per family. Sometimes three, four, or more persons had slept in the same bed as the patient. Therefore the overcrowding factor could not have been very important; otherwise there would have been a pandemic. It was also difficult to assess the factor of poverty. Fourteen of the families in the group were in comfortable circumstances. The civilians, if they were lucky, were receiving 1,500 calories a day; the men in the Services, 2,300 calories. The incidence among the civilians was 1.48 per thousand of population, and the incidence among the men in the Services almost exactly the same, while in the island of Gozo, where there was plenty of food, the incidence was 1.31. Nutrition, so far as could be estimated, did not play an important part in the incidence of the disease. During the first three months of life there seemed to be passive immunity conferred by the mother; there was a higher incidence at six months, a still higher incidence at nine months, a slight decrease at twelve months, a lower incidence in the second year, and a progressive diminution down to the age of 5, after which there were practically no cases at all. The youngest child in the family was most frequently affected, and the second youngest came next.

In the course of the discussion Prof. Seddon's remarks were supplemented by Dr. T. AGIUS-FERRANTI, who said that the most constant clinical feature found in the histories of these Maltese children was periodic flushing. He was impressed by the number of mothers who told him that the children were flushed at one time and at another were deadly pale. Rigidity of the spine, which in the textbooks was said to be a common feature, was not observed. One of the most frequent complaints was of abdominal colic associated with uneasy micturition.

Correspondence

Sergei Sergevitch Yudin

SIR,—The publication of Prof. Sergei Yudin's paper in your issue of Nov. 6 prompts me to write a few lines about this dynamic personality. I trust that the fact that this communication on the treatment of gunshot fractures of the femur comes from the pen of a general surgeon will not induce my good friends who are masters of the orthopaedic art to pass on with averted eye, since Yudin's experience with fractures produced by enemy missiles is really immense. Until I recently made contact with him in Moscow I had in fact regarded this great surgeon as one whose special interest lay in gastric surgery; the orbit of his surgical activities is, however, wide and most catholic in its range. In peacetime he is served by 18 assistants in his great emergency hospital.

During the period of 14 years that he has been head of the Surgical Service of the Sklifassovski Hospital he and his assistants have extracted almost 5,500 foreign bodies from the oesophagus and bronchi with a mortality of just over 1%; Yudin had completed three months ago 89 operations of oesophagoplasty for severe simple stricture of the gullet; he and his assistants have performed nearly 5,500 operations on the stomach; there have been 100 operations of total gastrectomy for cancer with a mortality of only 30%. He has performed three hind-quarter amputations for sarcoma of the hip or upper femur; he has completed a number of plastic operations for congenital absence or atresia of the vagina, employing a segment of the intestinal tract for the purpose. The ulcers of the stomach and duodenum which the recent Anglo-American-Canadian Mission saw operated upon in this hospital possessed the most fearsome dimensions and an almost prohibitive fixity, yet resection was successfully carried out. The organization of "femur brigades," to which allusion is made in the article in your *Journal*, is due to him, and dates from the time that he became one of the consulting surgeons to the Red Army. The stupendous character and magnitude of the surgical work for which Yudin has been responsible are all the more wonderful when it is remembered that a gunshot wound of the spine in the last war confined him to bed for 9 months with paraplegia. An illness in the beginning of 1942 again restricted his activities, and his fervent patriotism chafed at his inability for a time to serve with the famous Red Army. Fortunately for the Russian wounded his health and his indomitable spirit and energy have been restored. The Royal College of Surgeons of England and the American College of Surgeons conferred an Honorary Fellowship upon this master-surgeon in Moscow; he is indubitably one of the greatest surgeons in the world to-day.—I am, etc.,

London, W.1. GORDON GORDON-TAYLOR.

Spinal Anaesthesia

SIR,—I feel attention should be drawn to the possible results which may attend the use of the spinal solution mentioned in Prof. Yudin's article on gunshot fractures of the limbs in your issue of Nov. 6. He advocates 1 c.cm. of 1% nupercaine (Russian synonym: sovkain). For spinal anaesthesia the strongest concentration of this drug available in this country is 1/2% (1:200). 1 c.cm. of this concentration produces anaesthesia of the lower limbs. If more extensive anaesthesia is needed I would prefer to increase the volume rather than the concentration until I have further proof that a 1% solution of this potent anaesthetic does not carry with it the possibility of permanent damage to nerve roots.—I am, etc.,

Oxford. WILLIAM W. MUSHIN.

Anxiety and Hysteria

SIR,—In their admirable paper on "Anxiety States in the Navy" (Nov. 13, p. 603) the authors say: "We attach great importance to the necessity for regarding hysterical manifestations as but symptoms of the fundamental anxiety, and no attempt has been made to separate those cases which showed hysterical phenomena from the general mass of anxiety states." This is a welcome change from the statistical evaluations of

anxiety and hysteria which have poured out since the war—and before. These have always appeared to me somewhat lighthearted, if not entirely worthless, because they are compiled on the assumption that all psychoneurotics are either anxiety cases or hysterics. In point of fact the largest class is that of the anxiety-hysterics. These are the cases which predominate both in peace and in war because partially transferred anxiety is commoner than either pure anxiety or pure hysteria.

I submit, therefore, that we are obliged to adopt an elastic conception of the psychoneuroses rather than any rigid classification based upon psychopathological dogma. This is all the more necessary in that the evaluation of psychoneurotic symptoms is bound to be to some extent subjective. I submit, therefore, the following four points:

1. The pure anxiety case is devoid of dramatization and is relatively rare.
2. The pure hysteric dramatizes all her anxiety in its nascent state. She is also rare.
3. The predominant group is rightly described as anxiety-hysteria in that the anxiety is partially dramatized.
4. The symptomatology of the psychoneuroses partakes therefore of the nature of a spectrum, and any classification in terms of pure cases tends to be confusing.

And if we take this view we may get a clue to the question that Sir H. H. Bashford puts in his letter (p. 619). If peptic ulcer is closely associated with pure anxiety it follows that it is least likely to occur in hysterical patients. The ratio of pure hysteria in women as opposed to men may not be capable of objective demonstration, but we can at least say that it is much commoner. Hence we may reasonably infer that women escape a measure of peptic ulcer on account of their greater facility for transforming anxiety into hysterical manifestations.—I am, etc.,

London, W.1. H. CRICHTON-MILLER.

Mind and Stomach

SIR,—If peptic ulceration is a psychosomatic disorder, perhaps an explanation of the different incidence in the sexes mentioned by Sir Henry Bashford in his letter is to be found in the different psychological outlook of men and women. For long ages the "weaker" sex has been regarded as especially liable to nervous upsets. Hysteria, as the name implies, was thought to be a disease peculiar to women. The "going into a decline" so common last century was probably always a feminine reaction to emotional mishaps. A nervous breakdown would be the current description. Nervous debility is most sympathetically regarded if it occurs at the menopause or, in a woman, as the result of war strain. The position for the man is different. He has an equally old tradition behind him, but in his case it is not softness but toughness that is expected. Nervous debility does not sound too good for him. Unconsciously—that is to say, unaware, and unable to control it if he were—he is driven to the somatic moiety of the mind–matter medal. A duodenal ulcer confirmed by *x* rays, and particularly if it has bled or burst, will solve many environmental difficulties, and with a minimum or no loss of face. Maybe the full emancipation of women, among other changes, will lead to a general levelling out and the disappearance of some of these sex differences.—I am, etc.,

London, S.W.1. E. GALLOP.

SIR,—Sir Henry Bashford (Nov. 13, p. 619) says: "The national and international environment during the last twenty-five years has been the same for both sexes, and it would be difficult to argue that women are less exposed to the ordinary stresses and strains of everyday life than men. If there is a strong psychical factor at work in the causation of peptic ulceration, why are women so relatively immune?"

But are "ordinary stresses and strains" by themselves often causes of illness? It is true that Davjes and Wilson (*Lancet*, 1937, **2**, 1531) found that "events" preceded peptic ulceration in 84% of a series of 205 patients. These events were of three main classes—changes of work, financial difficulties, or illness or death of a member of the family. But they also found that 78% of the same series of patients had an unusual mental tension. Wilson (*Brit. J. med. Psychol.*, 1939, **18**, 112) described the main basis of this mental tension in a series of 50 patients who had had haematemesis as a need for dependence, often driven by fear into an aggressive and exaggerated independence. Surely the usual early upbringing of boys, with its emphasis on the suppression of emotions of dependence in the interests of "manliness," is a more likely source of this form of mental tension than that of girls, who are allowed to keep much of their dependence and to express more freely the emotions natural at that age.

Whether or not this may be a reason for the relatively greater incidence of peptic ulceration in males than females there is no doubt that problems of adjustment to personal relationships during the first five years of life differ greatly between the two sexes.

The main question raised by Sir Henry's letter is whether, when we acknowledge (as is now so common) the "psychical," "nervous," or "anxiety" factor in this or that disease, we mean mere worry on the conscious level or morbid anxiety, precipitated perhaps by conscious worry, but exaggerated in its reaction by reason of an abnormal state of tension rooted in the unconscious mind.—I am, etc.,

Aylesford, Kent. E. P. EDMONDS.

Functional Dyspepsia

SIR,—Sir Henry Tidy (Oct. 16, p. 473) arrives at the conclusion that "men suffering from non-organic dyspepsia can in many cases make useful soldiers providing they are not detained too long in hospital. Cure of symptoms should not be attempted. An excess of medical attention and investigation results in exaggeration of symptoms and repeated admission to hospital." He gives as evidence for this statement the official returns of diagnoses of Army personnel on discharge from the Army for a given period in 1941. These figures show that 0.03% of men were discharged from the Army under the heading of "Non-ulcer Dyspepsia" and 42% were discharged from hospital with the same designation. He repeatedly emphasizes the bad effects of treatment upon this group, and points out that wide experience shows how easily they relapse after return to duty.

He indicates that a certain number of these men are found useless in their units, and consequently are discharged from the Army with the label of psychoneurosis. Unfortunately he does not give figures, which, if available, would be of considerable support to his thesis. Are "follow-up" figures available of non-ulcer dyspeptics discharged from hospital? He finds some interesting similarities between non-ulcer and ulcer dyspeptics. Approximately the same percentage have a history of similar symptoms in civil life. The sex ratio is also maintained, although the preponderance of males is greater in the ulcer group. Surely there is need for much further observation and investigation, possibly better conducted in the unit than in hospital.

In his 19% of patients with peptic ulcers whose symptoms began in the Army the average length of history was nine months. This does not indicate that medical officers have referred cases for special investigation without good cause. It is most unlikely that unit treatment of the non-ulcer group is materially different from those with ulcers. Better reasons for the earlier reference of dyspeptics to hospital in military as opposed to civil life are given in this paper.

Finally, what are the distinguishing features of a functional dyspepsia "organic in the sense of disturbance of function," not a psychoneurosis, in which there is an "absence of recognizable anatomical changes or demonstrable disease in the stomach and duodenum and elsewhere in the body"? Do any of the cases which have been produced by an excess of therapeutic zeal belong to this group?—I am, etc.,

A. S. THORLEY,
No. 2 Army Selection Centre. Major, R.A.M.C.

"Duodenitis"

SIR,—In his authoritative article on peptic ulcer and dyspepsia in the Army (Oct. 16, p. 473) Sir Henry Tidy expresses concern over the term "duodenitis," but I am afraid that his protest is too late and that the expression, however unsuitable, has come to stay unless someone supplies quickly a more appropriate word. I have been hoping that someone would come forward with a satisfactory definition. I do not feel equal to this myself, but on the occasions when I have employed the term, always, I hope, in inverted commas, I have implied

the following: "I have spent a humiliating and profitless morning with this patient's duodenum; at the first examination there was complete pyloric spasm, which could not be overcome by any alteration of position or pressure. On re-examination, 30 minutes later, the stomach was nearly empty, so, after overcoming the reluctance of the patient, a second meal was given. At irregular and infrequent intervals barium was seen to spurt rapidly through a contracted cap, but I do not think that the deformity shown was constant, and on three very brief occasions I saw the cap dilate apparently normally, but each time I was taken by surprise. Pressure over the cap causes discomfort. I have taken numerous films in different positions; none of them shows any barium in the cap at all. I have a compression device with quick change over of screening to radiography, but that shows no filling either. Comments: I cannot pass the duodenal cap as behaving normally; I think that it showed a normal silhouette, for what that is worth, on a few fleeting occasions, but I cannot show acceptable evidence of ulceration." This is an exhausting performance, and if it happens two or three times during a session I feel glad at the end of it to be able to make use of a non-committal term such as "duodenitis"; but surely, with our gift of producing the telling phrase, we, or even more our American colleagues, could introduce something more suitable.

As regards the radiological investigation of the duodenum, I think that the difficulties in providing satisfactory evidence are under-estimated by our colleagues, and I regard this examination in a thick-set muscular male as one of the least inviting and satisfactory enterprises in ordinary radiological practice.—I am, etc.,

CHARLES WROTH.

"Primary Atypical Pneumonia" or "Pneumonitis"?

SIR,—The term "primary atypical pneumonia," which I have even seen abbreviated to "P.A.P.," is being increasingly employed to describe the common condition of benign inflammatory consolidation of the lung. This disease has been well known to some clinicians for more than ten years, but it has only recently become generally recognized. It seems possible that the term will come to be accepted as the official designation of the condition, and for this reason it is desirable to consider whether it is appropriate to fulfil this purpose.

The word "primary" taken in conjunction with "pneumonia" is clearly misapplied, for clinical experience shows that the infection is either a general one or it originates in the upper respiratory tract; the consolidation in the lung is merely an incident. For many years this same condition has been described as a "feverish chill" or "febricula," and the frequency of consolidation has only been recognized since the wholesale use of *x* rays in diagnosis. Often there are no abnormal physical signs in the chest, or at the most the signs of bronchitis.

Of what is the condition "atypical"? In this context the phrase must imply that the disease is closely allied to lobar pneumonia. But this is far from the truth, for the two conditions can be distinguished at a glance; the respiration rate of lobar pneumonia is greatly increased, whereas in "P.A.P." it is hardly affected. In fact the disease shows a clear-cut pattern and follows a definite course, which seems to indicate that it is a distinct clinical entity. It is possible that a similar result may ensue from a variety of infections, both bacterial and virus, and it may be that more than one cause will be identified as being responsible for this syndrome. There is an urgent need for an investigation into the results of chemotherapy in a large series of cases; it seems clear that most cases do not respond to sulphapyridine, but it is possible that there is a group which does.

The word "pneumonia" conveys the idea, both to the profession and to the public, of a serious disease which has a definite clinical course, a high mortality if left untreated, and termination by crisis. The use of this word is therefore misleading as a description of the benign condition under consideration.

It would thus seem that each word in the phrase is inappropriate. On the other hand, the word "pneumonitis" implies "inflammation of the lung" and nothing else. It is a much more handy term for general use, and it describes the clinical entity concisely and appropriately. It is possible that increasing knowledge of the cause of the condition may eventually suggest a better term, but this is a matter for the future to decide.—I am, etc.,

London, W.1. JAMES MAXWELL.

Vitamin B Deficiency

SIR,—We take the opportunity of replying to Dr. G. H. H. Benham, who criticizes our article on vitamin B deficiency (*Journal*, Oct. 23, p. 503) in your issue of Nov. 13 (p. 619).

1. Dr. Benham complains that in our italicized list of symptoms common to psychoneurosis and vitamin B deficiency we specifically omit diarrhoea, which to him seems inexplicable, because "diarrhoea is such a cardinal feature of the disease [pellagra] and so important in diagnosis." May we point out that it is not diarrhoea but constipation which is described[1-7] as a constant manifestation of a moderate deficiency of the vitamin B complex and of vitamin B_1? Dr. Benham is doubtless confusing the symptoms of mild vitamin B deficiency with those of frank pellagra, which is rarely seen in this country. Although the general symptoms of pellagra are summarized in the textbooks by the three D's—diarrhoea, dermatitis, and dementia—these may be absent in the early stages. Diarrhoea is by no means a cardinal feature of the disease in its mild form. On the contrary, the presenting complaints of the potential pellagrin are often constipation, anorexia, dyspepsia, and a sore mouth and tongue—the *pellagra sine pellagra* of former writers.[8] It is important to emphasize that constipation may be present in the early stages of pellagra and that diarrhoea is only diagnostic in the late and advanced stages, which are rarely seen in Britain. Often diarrhoea and constipation alternate. To wait for the three D's is to delay diagnosis. A recent survey[9] of children in several pellagra families in the United States revealed that constipation was a common symptom.

Dr. Benham also calls us to task for omitting the condition of the bowels of our patients. Constipation and diarrhoea are such relative terms and used so loosely by hospital patients that little reliance can be placed on their statements in this respect unless the conditions are gross. Thus many a patient thinks he is constipated if he does not evacuate daily. It is only when stools can be inspected that the terms constipation and diarrhoea are worth noting.

2. We agree with Dr. Benham that other factors besides a marginal diet may precipitate deficiency disease. In fact we have stated that some of our patients suffered from lack of appetite and nervous dyspepsia, which would reduce further the intake and absorption of vitamins. Dr. Benham asks why one patient develops pellagra while another on the same diet does not. Such individuals are on a marginal diet, just above that supplying the minimal requirements of certain vitamins sufficient to prevent deficiency disease. A condition may occur in one patient and not in another, calling for an increased requirement of one or more vitamins (e.g., infection, hyperthyroidism, pregnancy, increased physical exertion); or resulting in diminished intake or absorption (e.g., gastro-intestinal disease, diarrhoea, anorexia); or interfering with utilization (e.g., liver disease, alcoholism); or increasing excretion (diuresis, pregnancy). One or more of these factors just tips the balance in favour of avitaminosis and deficiency disease. It is well known that many Chinese women appear normal in early pregnancy, but are often *in extremis* at the end from deficiency disease.[10] According to modern conceptions malaria, ankylostomiasis, chronic bacillary and amoebic dysentery, and intestinal tuberculosis are predisposing factors in tropical pellagra.[11] Beriberi certainly seems more prevalent in malarial districts.[12] Fox[13] also points out that African natives do not develop scurvy on a diet low in vitamin C in the absence of precipitating factors (e.g., infection).

3. Dr. Benham states that psychopathologically there is no distinction between psychoneurotic patients and those we have described. He postulates early organic cerebral changes in both. Has he incontrovertible histopathological evidence that such changes do occur, or is this just inference from studies made on the brains of patients with chronic dementia? We know of no reported case of mild vitamin B deficiency (we exclude fatal pellagra) in which histopathological changes in the brain

have been demonstrated. Our primary concern was not with the histopathology of vitamin B deficiency but with the recognition of its oral and mental manifestations as an aid to early diagnosis. Patients suffering from this condition need never reach a hospital for nervous diseases—sometimes it is a mental hospital—if it is recognized and treated early enough, not by sedatives or psychotherapy but by diet and appropriate vitamin therapy.—We are, etc.,

Wellcome Research Institution, London, W.1. A. G. CLARKE.
F. PRESCOTT.

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Congenital Jaundice in a Man aged 77

SIR,—I have just seen a man who has been more or less strikingly jaundiced all his life and who was 77 years of age on Nov. 25. He enjoys good health, has hardly ever required medical aid of any kind, and continues at work—helping a married son with whose family he lives. I first examined him (in connexion with a life assurance question) in 1917, and from time to time have demonstrated his case at the Royal Society of Medicine (*Proceedings*, Clinical Section, 1917, **10,** 13; 1928, **21,** 3; 1938, **31,** 39). He has scars from leg ulcers (1910), considerable deafness (old otosclerosis), and slight nystagmus. The blood bilirubin has, of course, been found in excess in the blood serum (negative direct Hijmans van den Bergh reaction), but the urine has always been found free from bilirubin and from excess of urobilin and urobilinogen. There has never been any anaemia or enlargement of spleen or liver. No abnormal fragility of the erythrocytes (towards graduated sodium chloride solutions) has been discovered. The size and shape of the erythrocytes have never been sufficiently studied to enable one to exclude excess of spherocytes. Anyhow, the case seems to be a very unusual one of congenital haemolytic (acholuric) jaundice, arising doubtless from a germ cell mutation—possibly a new one, as there is no other example of jaundice in the family. The jaundice has not been transmitted to any one of his four children.

I am anxious to ascertain whether medical readers know of a case similar in all respects. I might mention that in the haemolytic (acholuric) family, which I recorded with G. Dorner (*Lancet*, 1910, **1,** 227), the first ancestor known to have been affected was a man who had been "yellow all his life," and died at 76 (wrongly printed "70") as a result, it was said, of leg ulcers.—I am, etc.,

London, W.1. F. PARKES WEBER.

Significance of the Rh Factor

SIR,—In his letter in the *Journal* of Oct. 30 (p. 557) Dr. A. P. Bentall makes, inadvertently, a most inaccurate and misleading statement. It is not correct to say that the children of a homozygous Rh-positive father (RhRh) and an Rh-negative mother will almost always suffer from erythroblastosis. In our article (*Journal*, Sept. 4) we pointed out that haemolytic disease of the newborn is very much rarer than it would be if it occurred in every family in which the father is Rh-positive and the mother Rh-negative. But once the disease has appeared all subsequent Rh-positive children will almost certainly be affected—very occasionally a later Rh-positive child is born apparently normal. Clearly, women vary greatly in the readiness with which iso-immunization to a foetal antigen occurs; thus we have observed families in which Rh-negative mothers have borne as many as six healthy Rh-positive children without miscarriage or stillbirth. Similarly, it has been found that many Rh-negative women transfused with Rh-positive blood fail to become immunized at all, even after repeated transfusions, whereas others develop antibodies after only a single transfusion. An Rh-negative mother is more likely to be immunized when every pregnancy is Rh-positive and provides the antigenic stimulus as it does with a homozygous husband than when he is heterozygous and some of the children are positive and others negative. This being so, it is obvious that the proportion of homozygous fathers producing affected children will be greater than the proportion of heterozygous fathers, and from this it follows that in *affected* families there will be a shortage of Rh-negative children. In our series of 50 families the shortage of Rh-negative children may have been abnormally marked, and in later families we have occasionally found Rh-negative children; but our experience is that the homozygous father more frequently brings about iso-immunization of the mother than does the heterozygous father, and in our opinion, unless the father of an affected child has disclosed himself as heterozygous, the chances of a subsequent child being born unaffected should be regarded as very poor. With a heterozygous father the chance of the next pregnancy being Rh-negative is one in two, and although an occasional later Rh-positive child will show no signs of the diease, the chance of a heterozygous father producing a normal child is only very slightly better than one in two.

By serological tests recently described (*Nature*, 1943, **152,** 300, 563) it is possible to recognize the genotypes of a large proportion of persons and in many cases to say whether a man is homozygous or heterozygous Rh-positive; with this knowledge we can form a better estimate of the chances of unaffected children being born to couples who have had erythroblastotic babies. These tests, owing to the scarcity of the necessary sera, cannot yet be made on a large scale, but the results confirm the opinion expressed in our paper that the proportion of homozygotes is higher among fathers of affected families than in the general population.

In Dr. Bentall's case the occurrence of Rh-negative children shows that the father is a heterozygote, and it is to be expected that all the rh-negative children would be unaffected. It is not necessary to suppose that the first two children are Rh-negative; our table shows several families in which three Rh-positive children were born before the disease appeared.

Dr. Bentall is right in thinking that the knowledge that unaffected children may be born will encourage those who have to supervise the pregnancy of a woman who has already had erythroblastotic children. There is much more encouragement in the knowledge that adequate transfusion of the newborn with appropriate blood may save nearly all the affected babies, as Gimson suggested in this *Journal* on Sept. 4.—We are, etc.,

Cambridge and St. Andrews. R. R. RACE. G. L. TAYLOR. D. F. CAPPELL. MARJORY N. MCFARLANE.

Are Hospital Diets Adequate?

SIR,—Patients discharged from hospital complain that diet in hospital is not only insufficient but that it is badly cooked and served in an unappetizing manner, so that they often cannot eat the little they get and rely to a considerable extent on food brought to them by relatives. I have found patients suffering from surgical affections, which do not call for dietary restrictions, lose as much as 14 lb. in a month. They surrender their ration-books to the hospital authorities, who remove their food and "points" coupons. Although butter coupons are removed they complain that they are never given any butter during their stay.

It is certainly time that hospital feeding was investigated—and hospital cooking. Adequate feeding would contribute materially to shortened convalescence, a matter of some importance in these days.—I am, etc.,

Brookwood. H. M. STANLEY TURNER.

Sterility and Impaired Fertility

SIR,—The only point at issue between the two letters on this subject published on Oct. 16 (p. 493) and on Nov. 13 (p. 619) is concerning the relative importance of voluntary and of involuntary sterility as causes of the decline in the population. The writers of the first letter, after a preliminary and confessedly limited investigation of the subject, have reached the conclusion that involuntary sterility is a more important factor in the decline than was previously supposed, whereas the writers of the second letter are inclined to disagree with them. All signatories are, however, in agreement that every aspect of this

important subject must be fully investigated. It is certainly true that no authoritative pronouncement on this question can be made until much more evidence becomes available, and that valuable data would be derived from census inquiries. It was with the object of calling wider attention to the need for a complete and searching investigation of the causes—economic, biological, and pathological—of the decline in the population that the earlier of the two letters was written. We are therefore grateful for the support given by the signatories of the second letter to the need for this investigation, even although they are of the opinion that the economic causes are of greater importance than the factor of involuntary sterility.—I am, etc.,

KENNETH WALKER,
Chairman of the Subfertility Conference of the British Social Hygiene Council.

London, W.1.

Contraception and Sterility

SIR,—Mr. V. B. Green-Armytage appears to have a highly elastic mind, if one can judge by the last two publications in the *Journal* to which his signature has been appended. In the first letter (Oct. 16) it is stated:

" . . . In one group (numbering more than 200 women) of regular users of birth control the average number of children was higher than a comparable group of women using the same methods intermittently. Further investigations show that the contraceptive methods most commonly used by the industrial population "—fertile and infertile alike—" are notoriously unreliable (coitus interruptus and soluble pessaries); their seeming success, to which many working-class women attribute the small size of their families, can be shown to reflect lowered fecundity in at least one-third of the cases (about 100) investigated." In other words, he accepts the inference that, given a higher degree of fertility on the part of the couple concerned, it will bear fruit in spite of attempts at contraception, whereas the fundamentally subfertile couple will achieve a small family by using quite unreliable methods of birth control irregularly—i.e., they are subfertile anyway and birth control is not responsible.

In his letter published on Oct. 23 he writes: "The deduction is that anything or any method which prevents, retards, or alters the normal degree of physiological absorption of human semen from the vagina carries with it during the early months and years of matrimony the risk of future sterility from failure of uterine development and endocrine asynchronization." In support of this theory he cites two extremely small series (20 cases in each group): Group 1 had used no contraceptives of any sort; Group 2 had used some form of birth control throughout marriage (chemical douches, caps with medicated pessaries, condoms, or coitus interruptus).

Even in his original paper he does not tell us the ages of these women, how long they had been married, the frequency of coitus, whether the husband's semen had been examined in each case and with what result, nor whether the patients in either group received treatment of any sort. He simply tells us that in both groups conception occurred in 25% of cases as soon as it was tried for; that in the first group 15 had, in his opinion, hypoplastic uteri, 9 of which grew to proper size in 4½ to 6 months; and that in Group 2 10 had hypoplastic uteri, but he does not tell us what they were like at the end of 6 months. Yet from this tiny series he is prepared to make the above deduction, attempting to support it by quoting the results of a few experiments with spayed immature female rats and immature female rabbits, which were injected intramuscularly or intravenously with human semen. These animals showed muscular and glandular development of the uterus and, in the non-spayed, hypertrophy of the ovaries. "Preliminary experiments," he writes, "indicate that full development of the female genitalia is due to the absorption of hormones by the vagina from the human semen," though there is nothing in his experiments to prove that absorption does and can occur from the vagina nor what it is that is absorbed. He quotes Noble (*J. Endocrinol.*, 1939, **1**, 184), who worked with synthetic testosterone propionate and not semen, and who produced various complex changes by injections of this hormone (sometimes combined with other hormones) given subcutaneously to rats, but does not quote Goldblatt (*Biochem. J.*, 1935, **29**, 1346), who, working with fresh human semen injected intravenously into young virgin rabbits, failed to produce any changes in the uterus or ovaries. He mentions the late Sir Francis Fremantle's recent statement in the House but does not refer to Dr. Gibbon Fitzgibbon's letter in the *Journal* (Sept. 11, p. 350) despite the latter's infinitely wider practical experience.

Mr. Green-Armytage then goes on to accuse contraceptive methods of attacking the arbor vitae and producing a cervicitis with subsequent cervical blockade, apparently ignoring the frequent association of a very typical and non-infective cervical blockade with endocrine dysfunction and genital hypoplasia, which, by the time he has reached his last paragraph, he is attributing rather to some harmful but unspecified influence on the growing girl's constitution and endocrine system than to the absence of semen in the adolescent vagina. Surely this is too important a matter for such wild assumptions. If, indeed, the use of contraceptives, more particularly by women in the younger age groups, is threatening fecundity, the sooner this is proved by properly controlled and adequate observations the better. If, on the other hand, quite different factors are responsible they must be unearthed and necessary action taken.

He ends by saying that it is irrational to set up petty sterility clinics to deal with the problems of subfertility, and that the work must be in the hands of properly staffed and equipped hospitals; but what the hospitals gain on personnel and equipment they lose on lack of time, intimate personal contact, and co-ordination. The hospitals have not at present time or space to cope adequately with the very great number of people, up and down the country, who want advice on subfertility; some in consequence are doing shoddy work, and many patients are frustrated in their efforts to get adequate investigation and treatment. Family Planning Association clinics have a definite role to fill; by creating a demand for good and thorough work they may galvanize the hospitals into more effective action, and they can act as sorting and co-ordinating centres and as sources of material for research. Why should they, as Mr. Green-Armytage suggests, be cut off from the team work of their local hospital? They should be in constant and close touch with it and have the advice and help of its consultant staff. Moreover, what general hospital has such easy access to large groups of *superfertile* patients as are available at F.P.A. clinics to act as controls in the many difficult problems confronting those who attempt to investigate, diagnose, and treat *subfertility*? —I am, etc.,

Crediton. MARGARET HADLEY JACKSON.

SIR,—It is most depressing that the preventive aspect of sterility should make so small an appeal to Dr. Malleson. In her first letter she merely asked for information. Physiological, pathological, biochemical, electro-potential, and clinical evidence was provided to show incontestably that mechanical plus chemical contraceptive measures before the first conception are deleterious. Seeing that the greatest living authorities on sterility were quoted—Rubin, Kurzrock, Miller, Meaker, and Séguy, men whose calibre, research, and team work we have so far been unable to match—it is no good being squeamish or peevish. No opposing or unbiased views of any real weight can be found to gainsay clinical facts that are easy of proof. It is, however, comforting to see in the latest editions of their textbooks that Blair Bell, Beckwith Whitehouse (Eden and Lockyer), and J. H. Peel (Forsdike), on pages 336, 215, and 341 respectively, all support the opinion that such methods are injurious from the point of view of future conception. For the rest *quod scripsi scripsi*.—I am, etc.,

London, W.1. V. B. GREEN-ARMYTAGE.

Early Diagnosis of Cancer

SIR,—It would appear from Dr. J. F. Brailsford's letter (Oct. 30, p. 555) that he would have the general public kept in ignorance of the early symptoms of cancer despite the consequences. I find his arguments difficult to follow. No one wants it advertised on hoardings; in fact, the hoardings which so desecrate our landscape are largely disappearing from the country, and we all hope that ultimately they will be eradicated.

That a few out of the thousands of cases dealt with by radium or *x*-ray therapy have been made worse and their sufferings increased merely indicates that we have not reached perfection, that cases have been badly selected or improperly dealt with. Failures and mistakes will have been made in all branches of medicine and in any other walk of life. The most likely source of failure in radiotherapy, and one which may lead to much unnecessary suffering, is the attempt at radical therapy in cases unsuited or too advanced for such treatment. The same applies to surgical treatment of the too advanced, such as radical mastectomy for late carcinoma of the breast and many other procedures of like description, where a major operation planned on the best lines may only lead to further suffering. We need team work and better co-operation between the different specialties in order to select the best treatment for each individual case. Carcinoma of the rectum is a good example. An advanced case with a fixed ulcerating growth and stenosis of the bowel may derive no benefit from radiotherapy, and is likely to be caused greater suffering by attempts at radical therapy by radium. It is surely the aim of all of us to relieve suffering, and no body of people realize this

better than those who devote their full time to radiotherapy and to whom these patients so often turn for treatment and assurance. The therapist or surgeon who treats the disease and forgets the patient is making a mistake.

As regards statistical incidence of cancer, this will continue to rise everywhere until 100% of cancer cases are diagnosed as cancer. One thing we can be pretty sure about is that a cancer case will not get better without treatment, and that in the majority of cases there is a point at which it will become hopelessly incurable. It is because we do not know just precisely when it becomes incurable that we do not regard cancer as an "acute" or "semi-acute" surgical condition. We know from statistical reports that a perforation of the bowel if left more than 30 hours has most likely been left too long, and we would deprecate the delay. The same applies to a cancer case if we substitute days or weeks instead of hours, and we know from experience that a carcinoma of cervix or uterus with symptoms for 30 weeks has little chance of survival, and that there is some particular time when such a case crosses the line that separates those which are curable from those in which the patient will suffer from "recurrences" and ultimately die from the disease. Here are some statistics from one centre to show just what proportion are on the wrong side of that line. Similar figures will be found all over the country.

Carcinoma of Cervix, 1929–35

Stage	No. of Cases	No. Died of Cancer	No. Alive 5 Years	Died of Other Causes or Lost Sight of
III or IV ..	257	213	36	8
I or II ..	162	76	75	11

From this we see that three-fifths of the cases applying for treatment were hopelessly inoperable; they had a one in seven chance of a five-year cure by radiotherapy, and it is questionable whether it was really worth while treating more than half of them. Only two-fifths came at the stage where they had a 50% chance of cure. If those 419 cases came at the earliest possible sign—if they were all Stage I cases—they would have about 80% chance of cure even with present methods, which may leave much to be desired, and we have not yet got down to screening the radiation from the rectum and perfect distribution of the radium.

Now, why should children lose their mothers (or fathers) because their parents are kept in ignorance of the early signs of cancer? It is fear and ignorance which stop them coming. Do we think that the public "cannot take it"? Experience teaches us that we can always take the truth better than deception. By this I do not mean that we should tell the patient that he or she is suffering from cancer, or use the brutal phrase which Dr. Brailsford has put into the mouth of the cancer expert: "You know what is the matter with you, missus; you've got a cancer." What we want is for the public to know that a tumour, especially one which is painless, requires prompt attention. The incurable cancer case we must continue to deceive and console with palliative treatment or placebos and analgesics, and may we be forgiven for the deceptions we practise!

But what harm in educating the public just a little? Why not make a start? I would suggest that the last page or two of the first-aid books which are so popular might have a little space devoted to pointing out what are the "early signs of a tumour," and might give just enough information to enable the reader to recognize when he or she should attend a doctor for advice. It could be worded to give assurance and o encourage early treatment. If we could get it across to the first-aider it would not be long in reaching the majority of people. Then we might get our cases before they are too late, and our results would be more encouraging.—I am, etc.,

GEORGE W. BLOMFIELD,
Medical Director, Sheffield Radium Centre.

Radiology—Empiricism or Science?

SIR,—In the November issue of the *British Journal of Radiology*, writing under this title, Dr. A. E. Barclay presents a most interesting review of the progress of radiology, and also a timely warning about the present critical phase through which radiology is now passing.

It does seem to-day that radiology, and, in fact, radiologists, require a lead, and Dr. Barclay's article puts forward a sound and useful proposition to steer radiology on the right course in the future. He advocates a "radiological research institute" devoted solely to the study of the body in health in order to establish a reliable basis from which to assess the pathological, and asks whose duty it is to establish such an organization.

While wholly in agreement with his suggestions I would look even further ahead. For some time back many of my colleagues and I have felt that radiological affairs in this country require a lead from one body by the formation of a College of Radiology. In this college a large section would be devoted to research as Dr. Barclay advocates, while there would also be a teaching side for radiologists and radiographers with the appropriate examinations for higher and lower diplomas. Various types of equipment (for teaching purposes) might be placed at the disposal of the college by the various *x*-ray manufacturers, which indirectly would prove to the manufacturer an excellent show place for his products.

That radiology in this country will undergo some form of reorganization seems the common feeling, and the existing societies do not just meet the case. To my mind here is an opportunity and almost a duty for the British Institute of Radiology to rise to the occasion and create a College of Radiology from its present organization, and thus cement the unity of radiologists and give a lead to this important science, both in this country and, after the war, to those mutilated radiological remnants throughout devastated Europe.—I am, etc.,

London, W.1. NORMAN P. HENDERSON.

X-ray Diagnosis in Pulmonary Tuberculosis

SIR,—Dr. J. S. Sharpe in his memorandum (Nov. 6, p. 579) has pointed out the shortcomings of radiography in the diagnosis of a case of pulmonary tuberculosis. He has, however, failed to appreciate that there is no such thing as *x*-ray *diagnosis* in pulmonary disease, nor yet in many other types of disease, but there is *x*-ray *evidence*.

In pulmonary conditions the similarity between various radiological appearances is such that the failure to approach the case from every angle courts error in diagnosis and disaster. Apart from the usual clinical and pathological investigations, family and occupational history must be considered. This has been forcibly impressed upon me and stressed by me during twenty years' radiological practice in a mixed agricultural and industrial area. Dr. Sharpe's patient certainly received full clinical investigation, but one cannot help wondering what a later radiograph would have revealed. The radiological appearance of lung pathology frequently changes rapidly. Most radiologists of experience are alive to the limitations of mass radiography. There are limitations in every field of investigation.—I am, etc.,

Ulverston. RICHARD FAWCITT.

Unpadded Plaster in Open Wounds

SIR,—Undoubtedly many lives and many limbs have been saved by the modern treatment of compound fractures—i.e., adequate excision of dead and devitalized tissues, removal of foreign bodies, blood clot, and detached fragments of bone, followed by the application of sulphonamide powders, and fixation in plaster. In all papers on this subject great emphasis is laid, and rightly so, on the necessity for thorough cleansing of the limb and wound, for all aseptic precautions, "no-touch technique," changing of gloves and instruments, etc.; but can one say the same for the ritual during the second part of the operation—namely, the application of the plaster? When this stage is reached asepsis in many clinics simply ceases. One sees plaster bandages unwrapped by ungloved and even unwashed hands (in the surgical sense) and plaster slabs prepared on tables with unsterilized surfaces. These bandages and slabs are then soaked in unsterilized water in unsterilized buckets and handed to the surgeon or assistant, who applies them to the open and unprotected wound.

Should we not insist that plaster bandages and slabs are sterile before they leave the manufacturer and that all aseptic precautions are observed during the unwrapping, handling, and soaking?—I am, etc.,

Dundee. F. R. BROWN.

D. and V. and Mastoiditis

Sir,—I am grateful to Dr. Ellison for pointing out an error of logic in my letter (Oct. 23, p. 526). The sentence he justly criticizes would convey my meaning better should it read as follows: "In all cases of D. and V. and dehydration in which bacteriological examination of the faeces proves the absence of a specific organism the diagnosis of gastro-enteritis, if made, is probably incorrect, and the possibility of mastoiditis should be considered as a likely cause of the symptoms. If in such a case D. and V. and loss of weight continue in spite of dietetic, saline, and sulphonamide treatment, and if, in addition, the child is restless, puts his hand to his head, has a bald patch on the back of his head and enlarged glands in the posterior triangles, the diagnosis of progressive mastoiditis is almost certain. Such cases should be promptly handed over to the aural surgeon for surgical treatment, for progressive mastoiditis treated medically is a fatal condition."

I would remind Dr. Ellison that the condition to which I refer is one which is present only in infants; his remarks concerning ulcerative colitis and arsenical poisoning, somewhat tinged with sarcasm, are therefore irrelevant.

My letter was an attempt to show that even apart from universal breast-feeding much could be done by both prevention and cure to lessen the death rate among infants diagnosed as gastro-enteritis if its aetiology were more generally realized. It was not intended to arouse antagonism.—I am, etc.,

Liverpool. P. W. Leathart.

"Opponents of the Medical Profession"

Sir,—In his letter in your issue of Nov. 13 on "Opponents of the Medical Profession" Mr. Rugg-Gunn, seeking to show that his policy and his *Bulletin* are not anti-Semitic, writes that "quoting the book *Protocols of Zion* we were careful to indicate that there are doubts as to its authenticity."

There is an error here. There are no more doubts as to the authenticity (or probability) of this disreputable anonymous forgery than of the series of closely similar fantasies set forth by that accurate historian Adolf Hitler, in his *Mein Kampf*. That authority has also made many constructive suggestions for a medical policy, which Mr. Rugg-Gunn has doubtless studied. Some may be garnered from the pages of the vast volumes of *Hitler's Speeches*, edited by Prof. Norman Baynes.

Mr. Rugg-Gunn will find a complete and detailed demonstration of the unsavoury origin and fantastic nature of the moss-grown booby-trap in which he has been caught in *Portraits of Mean Men, A Short History of the Protocols of the Elders of Zion*, by Mr. John Gwyer, published in 1938 by Messrs. Cobden-Sanderson. Mr. Gwyer shows—perhaps for the hundredth time—that the main framework and much of the phraseology of the "Protocols" are taken from an attack on Napoleon III, first published at Brussels in 1865 as a romance under the title *Dialogues aux Enfers entre Machiavel et Montesquieu*, which has nothing whatever to do with Jews. The subsequent history of this paltry romance and its modification into its present form is an extremely complicated story. It has been traced in minute detail, but here it must suffice to say that the inglorious author was an obscure scribbler, one Maurice Joly (1831–78) of Lons-le-Saunier in the Jura, who, not inappropriately, died by his own hand.

Despite his zeal for accuracy Mr. Rugg-Gunn quotes wrongly the title of the obscene booklet, the authenticity of which he must be allowed to doubt if he prefers to do so.—I am, etc.,

The Athenaeum, Pall Mall, S.W.1. Charles Singer.

Sir,—I congratulate you on at last raising the ban on the mention of the Medical Policy Association, even though it be in order to misrepresent it (*Journal*, Oct. 30, p. 552). Your attempt to prove by false logic a connexion, where in fact no connexion exists, between it and Naziism and what is inaccurately called anti-Semitism is hardly worthy of an annotation in a journal concerned with the scientific method; nor is your rather scornful reference to a distinguished member of our profession. Moreover, it is a propagandist device too well known even to the most unsophisticated of your readers to succeed in its purpose.

As one who for years has been working for an objective closely corresponding to that of the M.P.A. (as former letters to you testify) and who has been connected with this association from its early days, though not actually a founder member, I emphatically assert that, unlike the panel system, by means of which official B.M.A. threatens to extinguish private practice, the M.P.A. draws none of its inspiration from enemy ideology, and there is not even a shadow of foundation for those statements of yours which border on the libellous, if, indeed, they have not offended against the law. The M.P.A. is not frightened by an attack such as yours. It has nothing to hide. It is based on truth and reality against which its would-be detractors can make no headway. Nothing would be more pleasing to its members than to have the attention of the whole profession directed to its origin, aims, and methods.

There are other organizations—the Fabian Society, the London School of Economics and Political Science, and Political and Economic Planning—to which you refer in your article, and about which you appear to be as ill informed as regarding the true nature of the Medical Policy Association. Can you say whether these organizations are as willing as is the M.P.A. to have their ultimate objectives brought into the clear light of day? What is the relation of their activities to present-day political movements both within and without the medical profession? Have they any connexion with the tendency which you deplore in your article "Misrepresentation" (ibid., p. 549) to make the line of medical development an issue of party politics?

I would suggest that anybody who cannot give satisfactory answers to these questions and others like them might be profitably employed in digging down to the roots of things, in exploring the sources from which political movements arise. In this connexion a useful exercise would be to make an investigation whether there is any foundation for the following statement which a Mr. Benjamin Disraeli (afterwards Lord Beaconsfield) puts into the mouth of a character in one of his novels: "So you see, my dear Coningsby, that the world is governed by very different personages from what is imagined by those who are not behind the scenes." How difficult it is for the ordinary personage to get even a peep behind the scenes!—I am, etc.,

Bexley, Kent. E. U. MacWilliam.

Sir,—Your timely castigation of Mr. A. Rugg-Gunn and his friends in the issue of Oct. 30 called forth a letter from him which you published on Nov. 13. There does not appear to be anything in this correspondent's letter to justify a reply, as it is what the German military authorities call a "disengagement" from an awkward situation; but it is worth while to recall a letter in his usual vein by this same correspondent which was published in the *Lancet* in October, 1939, and which was severely dealt with by subsequent letters in the same journal.—I am, etc.,

Golders Green, N.W. L. S. Woolf.

*** We have had a number of letters reinforcing those from Prof. Singer and from Dr. Woolf, but the correspondence must now be closed.—Ed., *B.M.J.*

Therapeutic Fallacies

Sir,—The up-to-date tuition given by Drs. Linnell and Thomson in their paper on therapeutic fallacies prompts some qualifying reflections.

1. Case management suitable in hospital consulting practice may not be fitting in general practice. A patient is not the same person in both settings, the doctors differ in prestige and use and duration of personal service, and the things to be known also differ. Patients come to the G.P. to find out all that the hospital doctor did not tell; G.P.s issue certificates and patients read books; a great many patients think they have "blood pressure" before they come for its measurement; and so on. A patient likes to be told as much truth as he can straightway be taught to bear. Truth-telling provokes "reality-thinking"; power to reassure depends on a proved lack of duplicity in the doctor; an anxiety state is best prevented and cured by understanding, anticipating, and balancing the patient's own inner thoughts and feelings.

2. Experimental conditions often differ in essentials from those of clinical experience. Clinically alcohol has a twofold effect, exciting in one way and depressing at the same time

in another way; dosage and circumstances may decide whether stimulation or depression prevails in the total effect. Very small doses and small variations of doses of digitalis cause subjective effects in some senile patients with slowly failing hearts. Assuming that a calcium salt "in some cases of chilblains seems to act like a charm" (Norman Walker) it is inconclusive to object that in all cases "the serum calcium is normal." Even if the objection be relevant, would one argue that a man's donations to persons and to charitable agencies could not bear any relation to his income because his deposit at the bank remained at the "normal" figure?

3. Drugs are not really things endowed with their own power to act; they are substances active in relation to living things and circumstances. Hence a remedy becomes an organismal "poison" only when inappositely prescribed or when given to the right patient in excessive dose. Hence also one should not expect a remedy to give consistent results in all patients or in all disease conditions given the same label. Sulphapyridine may settle a run of cases of tonsillitis within 24 hours in every case; the first failure may or may not indicate a newly arrived infection and give a different remedy a prosperous run. Pulv. ipecac. c opio may be either curative or simply emetic on the first night of a "cold," and the same kind of remark applies to various proprietary remedies. Surely the failures have no greater validity than the successes! Surely what is wanted in both events is more adequate discrimination of conditions, as has been largely done for iron and cod-liver oil. Meantime it is often the so-called uncritical impressions of G.P.s which silently decide the retention or discarding of a therapeutic novelty.

4. Large-scale statistics may contain large-scale error from insufficient differentiation of groups of cases. Injecting a multitude of factory employees with anticatarrh vaccine all on the same day does not seem a convincing experiment. Some employees come to the G.P. in a day or two suffering from a cold and seemingly worsened by vaccine given at the wrong time.

In short, there are canons of scepticism as well as canons of belief.—I am, etc.,

Greenford. W. THOMSON BROWN.

SIR,—A little iconoclasm is frequently salutary in a profession such as ours, which tends to become conservative, and I find much to agree with in Linnell and Thomson's article (Nov. 6, p. 572). I would suggest, however, that their article would be of greater benefit if they could suggest treatment, or, rather, prophylaxis which really works for some of the complaints they list. Can they say, for instance, that enemata will in the end break the constipated habit? As treatment it is unarguable.

As regards the common cold, I will join issue with them. My experience is based on the results of injections in a factory, where 70% of those injected were improved. This is, in my opinion, sufficient justification. The remaining patients for the most part were found to have some cause for their colds, such as sinus infection. I do not claim more than benefit, though a reasonable percentage of patients receive, apparently, immunity.

Have the authors *nothing* constructive to say about chilblains? And, finally, are they unaware of the possibilities in the use of testosterone propionate and nicotinic acid in the treatment of angina pectoris? No one claims that glyceryl trinitrate is anything more than a palliative.—I am, etc.,

Dorchester. T. RUSSELL STEVENS.

Reporting Deaths to Coroners

SIR,—Owing to uncertainty as to the obligations of medical practitioners to report deaths to coroners, the Medical Defence Union and the London and Counties Medical Protection Society have received a number of inquiries from their members as to the legal position. The above-named societies accordingly obtained the opinion of Mr. Roland Burrows, K.C., of which the following is a summary authorized by him:

1. There is no legally enforceable duty resting on a practitioner, acting as such, to report any death to a coroner.
2. The coroner has no power to require a practitioner to report any death to him.
3. It is the duty of the registrar of deaths to report deaths in certain circumstances to the coroner.
4. A practitioner must not do anything to obstruct the coroner in the discharge of his office.
5. A practitioner may make a post-mortem examination with the consent of the deceased's relatives, whether or not he knows the cause of death, unless by so doing he knowingly hinders the coroner in carrying out his duties; but, as soon as it comes to the knowledge of a practitioner that the coroner has been informed from any source touching the death, on no account should any examination of the body be made without instruction from the coroner.

We have stated above the legal duties of practitioners, but they, like other members of the community, have social, public, and moral obligations not enforceable by law to assist coroners. It is important that practitioners and coroners should collaborate harmoniously for the public good, and it is hoped that every practitioner will refer to the coroner any death respecting which he feels any doubt. A copy of Mr. Roland Burrows's opinion, upon which the above is based, can be obtained by members on application to the Secretary of the Medical Defence Union, 49, Bedford Square, W.C.1, or of the London and Counties Medical Protection Society, Victory House, Leicester Square, W.C.2.—We are, etc.,

JAMES FENTON,
President, Medical Defence Union.
CUTHBERT WALLACE,
President, London and Counties Medical Protection Society.

Obituary

JOHN LEVIS, M.B., B.Ch.

Mr. John S. Levis, honorary assistant surgeon, Royal United Hospital, Bath, and consulting surgeon to the Orthopaedic Hospital at Combe Park, died suddenly at his home in Lansdown Park on Nov. 5. He studied medicine in Cork and Dublin and took the Irish triple qualification in 1912, following this a year later with the M.B., B.Ch., B.A.O. of the National University of Ireland, which conferred on him its M.Sc. degree *honoris causa* in 1920. Mr. Levis began his service at the Royal United Hospital as resident medical officer, and on settling in practice at Bath became honorary anaesthetist. After the last war, during which he held the temporary rank of major R.A.M.C., he was senior medical officer for the city under the Ministry of Pensions. He had a widespread surgical practice in the adjacent parts of Somerset and Wiltshire, and was visiting surgeon to the Malmesbury Hospital, the Victoria Hospital, Frome, and the Trowbridge, Melksham, and Shepton Mallet Hospitals. Joining the B.M.A. in 1919 he held office as honorary secretary of the Section of Orthopaedics at the Bath Annual Meeting in 1925, and was chairman of the local Division in 1929–30. He was also a member of the International Society of Surgeons and of the Bristol Medico-Chirurgical Society.

A colleague writes: With the death of John Levis the profession has suffered a grievous loss. His value to the community cannot be assessed merely in terms of his undoubted professional gifts. He had attributes of character which would have made him an immense influence for good in any profession he had chosen to follow. He had the gifts of simplicity, physical and moral courage, directness and honesty, to a degree too rare in these days. He was tough where necessity demanded it, but his toughness was more to be respected when evaluated against the background of kindness and charity which was his essential nature. He was an underdog's man and an indomitable fighter for just causes. He weighed up situations according to the principles of ethics and despised the canons of expediency. He was unfailingly charitable to the afflicted and the soul of generosity. The world is poorer for his loss, and we in Bath have suffered not only a grave impoverishment of our efficiency as a medical community, but an incalculable depletion of our available forces of character. Another colleague writes: The sudden and unexpected death of Mr. Levis came as a great shock to everybody who knew him, not only in Bath but far outside the confines of the city. As a surgeon he was gifted with great powers of observation and diagnosis and was strongly opposed to routine methods, always striving for improvement, and before the war devoted his holidays to visiting the great surgical clinics of Europe. His colleagues bitterly deplore his loss, as do hosts of patients, who will miss his cheerful and friendly personality. After the air raids on Bath his house was crowded to overflowing with the homeless, for whom he could not do enough, while his platoon of the Home Guard were ever made welcome. The little spare time he had was spent in his garden, where the writer had the privilege of passing many happy hours

with him. He was a straightforward honest man, a staunch friend who never spared himself, and a wise counsellor to whom nobody ever appealed in vain for help or guidance. Only his closest friends have any idea of the extent of his charity. Jack Levis set a shining example of unselfish service and self-sacrifice.

We regret to announce the death at Brighton on Nov. 15 of Dr. LOUISA GARRETT ANDERSON, C.B.E. Her father was J. G. S. Anderson, shipowner, and her mother was Elizabeth Garrett Anderson, M.D., the pioneer medical woman in this country, whose life-story she told in a book published in 1939. She was born on July 28, 1873, and from St. Leonard's School, St. Andrews, went to the London (Royal Free Hospital) School of Medicine for Women, graduating M.B.Lond. in 1897 and taking the M.D. in 1900. After serving as house-surgeon at the Royal Free Hospital she became in turn house-surgeon, house-physician, and assistant surgeon to the New Hospital for Women, and then surgeon to out-patients at the Women's Hospital for Children, Harrow Road. In Sept., 1914, Dr. Louisa Garrett Anderson went to France as joint organizer of, and chief surgeon to, the Women's Hospital Corps voluntary unit. She returned to London in 1915 to take up the post of chief surgeon at the newly opened military hospital in Endell Street, and worked there until after the Armistice. For her war services she was created C.B.E. She joined the B.M.A. in 1898 and was honorary secretary of the Section of Obstetrics and Gynaecology at the Annual Meeting of 1905. On retiring from practice some years ago she made her home at Paul End, Penn, and was appointed a J.P. for the County of Bucks. Besides the biography of her famous mother she wrote a number of papers for medical journals and contributed the article on peritonitis to the *Encyclopaedia Medica*.

Dr. SAMUEL HEY died at Ripon on Sept. 28, aged 73. He was the only son of Samuel Hey, F.R.C.S. (1815–88), the Leeds surgeon whose grandfather, William Hey I, had been active in founding the General Infirmary at Leeds in 1767. Dr. Hey was educated at Tonbridge School, Trinity College, Cambridge, and St. Bartholomew's Hospital. He qualified in 1900, and after serving as house-physician at Bart's and R.M.O. of the Royal Chest Hospital, settled in general practice at Ripon, where he became surgeon to the cottage hospital, medical officer to the workhouse, and in 1904 deputy coroner for the Ripon district. He joined the B.M.A. in 1908 and was a member of the West Riding Medico-Chirurgical Society and the Harrogate Medical Society.

Dr. JOHN NEWBERY FERGUSSON, who died at York on Oct. 1 aged 62, was born at Wick. After three years at St. John's College, Cambridge, he went to St. Thomas's Hospital. He qualified in 1905 and till 1913 he practised at Malvern. In 1914 he went to Plymouth and from there joined the R.A.M.C. From 1915 to 1919 he was radiologist in No. 8 General Hospital at Rouen, and while he held that post he contributed to the *B.M.J.* an article on a new system of location and extraction of foreign bodies in the brain. In 1919 he became a Fellow of the Royal College of Surgeons of Edinburgh. In 1920 he went to York and in 1924 he became honorary radiologist to the York County Hospital. Up till three weeks before his death he gave unstinted loyal service to that hospital. He leaves a widow and a son and daughter; his son is a surgeon in an L.C.C. hospital. A colleague writes: Newbery Fergusson's death is a great loss to the medical profession in York and district. His knowledge of medicine and surgery, added to his skill in radiology, which included a mechanical genius and ingenuity in engineering, was always at the disposal of his confrères. If patient endeavour and conscientious striving to throw light on a difficult case were needed Newbery could be relied upon to provide these in full measure. He entered whole-heartedly into every phase of medical activity in the district and had held the offices of chairman of the York Division of the B.M.A. and president of the York Medical Society. In all his work he rightly enjoyed the respect and confidence of everyone in the profession. He was quiet and modest by nature, and work was his hobby. Latterly he carried on when those who knew him realized that he should be taking things more easily, but to spare himself was not the way in which he was built. He served his generation truly and well.

Dr. ARCHIBALD OLIVER, of Thetford, Norfolk, died in London on Oct. 4, aged 62. He was the third son of the late Archibald Oliver of Edinburgh, and studied medicine at Edinburgh University, graduating M.B., Ch.B. in 1904 and taking the M.D. and the D.P.H. in 1908. He had been M.O.H. for the Thetford Urban District Council since 1912, when he settled in that town. He served in the war of 1914–18 in the R.A.M.C. and was D.A.D.M.S. at Salonika with the rank of major; he received the Greek Order of St. Saviour and the Médaille des Epidémies in recognition of his work on malaria in Greece. Dr. Oliver took a great interest in public health work and started the Thetford maternity and child welfare centre. He was also president of the local branch of the British Legion, a justice of the peace, and a governor of the Thetford Grammar Schools. He joined the B.M.A. in 1908 and had held office as president of the Norfolk and Norwich Medico-Chirurgical Society. He was a keen golfer and angler. His death is a great loss to Thetford and district.

We regret to announce the death on Oct. 6 of Dr. ESSEX FRANK WAKE NIXEY, medical superintendent of St. John's Hospital, St. John's Hill, S.W.11. A medical student of Edinburgh University he graduated M.B., Ch.B. in 1908 and was appointed an assistant medical officer at St. John's Hospital by the Guardians of the Wandsworth Union at the beginning of 1909. He became senior medical officer in 1910 and deputy medical superintendent in 1913, and after transfer to the L.C.C.'s service in 1930 he became medical superintendent on April 1, 1933. Dr. Nixey thus spent the whole of his professional life at St. John's Hospital, and the Hospitals and Medical Services Committee of the L.C.C. has recorded that his long period of service was characterized by ability and zeal. He was particularly interested in psychiatry and made an outstanding success of his work in connexion with the large mental observation unit at the hospital. "His death is a grievous loss to the service, and his unfailing and sympathetic understanding and co-operation will be remembered with gratitude by patients and colleagues."

The death on Oct. 7 of GEOFFREY REMINGTON WILSON has removed a well-known and universally respected figure from the Essex town of Ongar. Wilson was born in 1874, educated at Aldenham School and Trinity College, Cambridge, where he graduated M.B., B.Ch. He learnt medicine at the London Hospital, where he held house appointments, and was also house-physician at Paddington Green Children's Hospital. In 1902 he succeeded to the practice of Dr. Grattan, Ongar, and conducted it up to a short time before his death over forty years later. Wilson was a man of diverse interests and busied himself with local affairs. He was chairman of the bench of Magistrates and of the Public Health Committee in the district council. He was a keen sportsman and played games well, besides being a good Latin scholar and well read in English literature. He was a prime mover in the founding of the Ongar War Memorial Hospital and an active worker in its wards. He will long be remembered for his kindly disposition and by his professional brothers as a loyal and honourable colleague. He joined the B.M.A. in 1902 and was chairman of the Essex Division in 1933–4.

Dr. EDWARD HULSE WILLOCK of Exeter died on Oct. 10 at the Royal Devon and Exeter Hospital, aged 75. He studied medicine at St. Thomas's Hospital, took the L.S.A. in 1891 and the M.R.C.S., L.R.C.P. in 1892, and then practised for a long time in Croydon, where he was surgeon to the War Hospital and assistant surgeon to the Croydon General Hospital, and later medical referee for the Ministry of Pensions. Dr. Willock had been a keen and active member of the British Medical Association, which he joined in 1899; he was a past honorary secretary of the Croydon Division, and from 1912 to 1920 a member of the Central Council. He also served on various committees and subcommittees at headquarters and represented his Division at seven Annual Representative Meetings. Before he went to live in retirement at Exeter he had been a J.P. for Croydon, and in recent years he was chairman of the National Service Medical Board, Exeter.

Prof. Grey Turner writes: Dr. H. E. GAMLEN, whose death was recorded on Oct. 16, was one of the pioneer workers in *x* rays, and especially on the therapeutic side. In the early part of this century, while in practice in West Hartlepool, he was not only treating lupus and rodent ulcer by *x* rays but also other types of malignant disease. From time to time he showed cases under treatment at the Northumberland and Durham Medical Society, and at the November meeting in 1904 he presented an example of epithelioma of the tongue in which the Roentgen treatment had been supplemented by the application of radium. This powerful element was in the form of radium bromide, which was kept in a glass tube in a thermometer case and was usually carried in the waistcoat pocket! There was no applicator and the tube was merely held in contact with the affected area. In view of the disappearance of the growth there were those who doubted the diagnosis in that case in spite of the pathological reports which Gamlen produced. But after some months there was a recurrence which was removed by operation, and it was then shown that the tissues were infiltrated with squamous epithelioma. In later years Gamlen

used to explain that in those early days he knew nothing whatever about the harmful effects of irradiation, but it was none the less relentlessly laying the foundation of that distressing dermatitis which was so marked in his case and which was ultimately followed by the development of epithelioma. In the course of years he submitted to many mutilating operations before the disease finally led to the inevitable end. His sight became much affected and deafness supervened, but I never heard him complain. He was always enthusiastic and enjoyed his hard work, and when about 10 years ago he had to give up practice finally on account of increasing disability he took up breeding dogs with great zest and with great success. His name certainly deserves to be recorded on the roll of *x*-ray martyrs. (During the last war he was attached as consulting radiologist to the Italian, not the Indian, expeditionary force as mentioned in your notice.) Gamlen had one son, who predeceased him, and is survived by his wife, who watched over his latter years with singular devotion.

Dr. PHILIP THEODOSIUS JONES of Coleford, near Bath, died suddenly on Oct. 21. A student of St. Bartholomew's Hospital he qualified M.R.C.S., L.R.C.P. in 1896, and in 1932 he retired from practice and received a presentation at Coleford from a large number of friends and patients—a framed and illuminated address on vellum and a cheque which at Dr. Jones's wish was used to equip the Bath Royal United Hospital with a portable *x*-ray apparatus. He had been a member of the British Medical Association for 43 years.

Dr. J. A. WAIN, who died on Oct. 25, graduated M.B., B.Ch. at the University of Witwatersrand, Johannesburg, in 1929. After various hospital appointments and some general practice he came to this country and took his Edinburgh F.R.C.S. in 1938. Shortly afterwards he was appointed to the staff of the Radium Institute at the Christie Hospital, Manchester, where he quickly assumed many responsibilities, and where he remained until his death. At the outbreak of war Mrs. Wain and a young daughter returned to South Africa, but Dr. Wain remained, as he would have been happy to put it, in the service of this country. In all his activities, whether in therapy, in teaching, at children's parties, or in digging for victory, Dr. Wain could be counted on for a lively contribution, springing from an energetic personality which knew how to combine enthusiasm with a remarkable capacity for taking pains. As a member of the Radium Institute team his knowledge, criticism, and unfailing generosity contributed largely to its effective working. His unexpected death after an operation, at the age of 38, is indeed a lamentable loss to radiotherapy, and will be painfully felt by his many friends both in and beyond professional circles. His best memorial is a substantial record of scrupulously careful and successful work.

Dr. HERMANN ARTHUR GUNTHER, a former chairman of the South Middlesex Division of the B.M.A., died at Hampton Wick on Oct. 28 after a brief illness. Born in 1872 in the same house where he died, Dr. Gunther shared with his father, the late Dr. Theodore Gunther, an unbroken family practice for a period of 80 years. During part of his boyhood he was brought up with his cousin, later to become Dr. R. T. Gunther, for many years Fellow and Tutor of Magdalen College, Oxford, and Curator of the Science Museum at Oxford. At an early age he went to University College School, and until he was old enough to make the daily journey to and from Hampton Wick, lived with his uncle, the famous zoologist, Dr. Albert Gunther, F.R.S., at the British Museum. H. A. Gunther studied medicine at University College Hospital, qualifying M.R.C.S., L.R.C.P. in 1896, and taking the M.B.Lond. three years later, after serving as obstetrical assistant at U.C.H., house-physician at the Brompton Hospital, and senior house-surgeon at the Royal Northern Hospital. Then for 40 years he practised at Hampton Wick, finding time in the intervals of a busy professional life to take an active part in the work of the Surrey Archaeological Society and of the Japan Society. Dr. Gunther had a wide knowledge of the history of his native district, and he formed a valuable collection of Netsukes.

Dr. ATHOL RAYMOND MOORE of Camberwell, who died suddenly on Oct. 30, studied medicine at Cambridge and the London Hospital, graduating M.A., M.B., B.Ch. in 1904, after which he served at house-physician and house-surgeon at the Poplar Hospital. Dr. Moore was for many years medical officer to the Newington Institution, surgeon to the L Division of the Metropolitan Police, and Admiralty surgeon for the No. 9 District. During the last war he held a commission as captain R.A.M.C., and received the Medal of the Order of the British Empire for rescue work in connexion with a Zeppelin raid. He joined the British Medical Association soon after qualifying and was a member also of the Medico-Legal Society. In view of his large experience in police work he was appointed a member of the Committee on Tests for Drunkenness set up by the Council of the B.M.A. in 1926 and also of the Police Surgeons Subcommittee in 1936. A. B. writes: It is perhaps in his capacity as joint hon. secretary of the Metropolitan Police Surgeons Association that Moore will be best remembered by his colleagues and friends. For many years he acted in this capacity, and his sympathy and helpfulness to the individual police surgeon who turned to him in any difficulty were invariable. A genial and cheerful manner sometimes seemed to temper convictions which he held strongly. But, particularly where the professional rights and interests of his colleagues were concerned, he was persistent in his advocacy. His sense of discipline and his forbearance often determined an urbane exterior which in no way deceived those who knew him best. His loss at this juncture will be especially felt.

The City of York as well as the medical profession of the city has suffered loss by the death of one of the oldest of its practitioners, GEORGE WILFRID GOSTLING, on Nov. 3, at the age of 73. He went to York in 1895 as house-surgeon to the York County Hospital and remained attached to it in various capacities for the rest of his life. He became a member of the honorary staff in 1899, and when he retired from the acting staff three years ago he had been senior honorary surgeon and chairman of the Medical Board for many years. He occupied the post of president of the York Medical Society, chairman of the local Division of the B.M.A., chairman of the Local Medical and Panel Committee, to the entire satisfaction of the members of these bodies. Dr. Peter Macdonald writes: A man of great charm, Gostling was not only respected but loved by all who knew him. He had a charitable outlook on things and on people. The writer, who knew him intimately during the whole of his York life and who shared many of his activities, cannot remember ever hearing him say an unkind word of anyone.

News has been received of the death in Peking in June last of Dr. W. H. GRAHAM ASPLAND, physician to the British Legation in that city. Dr. Aspland had an adventurous career. He was born in Toronto in 1868, and qualified in medicine in 1896, proceeding M.D.Toronto in the following year. He was the first doctor to be sent by Sir Wilfred Grenfell's Mission to Labrador. There he met his wife, Miss Ada Carwardine, who had been recommended to Grenfell by Sir Frederick Treves as a nurse, and had gone out from London to organize a small hospital on Battle Harbour Island. On this island, which is icebound for six or seven months of the year, Dr. and Mrs. Aspland worked for some years. Later they went to China as medical missionaries, and at Peking, under Bishop Scott, they founded a mission hospital and ran it with the help of Chinese students. Dr. Aspland, having become fluent in the Chinese language, acquired an interesting practice among high-class Chinese, and from 1905 to 1912 he was professor of obstetrics and gynaecology at the Union Medical College. He did excellent work in China. No enterprise offered too great hardship for him, and during an epidemic of pneumonic plague in Manchuria he went out there, serving under a Chinese doctor. Both he and his wife volunteered, but the authorities would not take women, and so Dr. Aspland went alone. He was in England on leave when war broke out in 1914, and, with his wife, volunteered immediately for service in France. In 1914–15 he was medical officer in charge of a military hospital there, and his wife was matron. He held the rank of lieut.-colonel, R.A.M.C. In 1915 they went to Serbia, where he was surgeon-in-chief of the Anglo-Serbian hospital, but in the following year they were taken prisoners by the Austrians. Later they were repatriated from Vienna to England, and Dr. Aspland set forth for fresh adventure in Russia, serving in the Anglo-Russian hospital in Petrograd and later with the field hospital attached to the Imperial Guards. During the summer of 1916 the hospital advanced with the Russian Army through the Pripet marshes for 80 miles. In 1917 Dr. Aspland went to Armenia and worked for a time with the "Save the Children" Fund. After the Armistice he and Mrs. Aspland returned to Peking, where he served as medical officer to the Legation quarter. When Japan came into the war they were interned in their own house in the Embassy compound. Dr. Aspland received Serbian, Russian, and Chinese decorations, and in 1936 the Cross of the Legion of Honour.

News has been received from India of the death of Dr. JAL PESTONJI PADSHAH, who was holding the post of dean of the G.S. Medical School and King Edward Memorial Hospital, Bombay. Dr. Padshah was born in 1897 in Bombay. He came to this country to study medicine at University College Hospital, where he won the Bucknill Scholarship. He graduated M.B., B.S.Lond. in 1920 and proceeded to the M.D. degree in 1922. Dr. Padshah worked in London for nearly ten years before returning to India, and had been a member of the British Medical Association for the past 23 years.

The Services

Cols. A. C. Macrae, V.H.S., and R. V. Martin, C.I.E., V.H.S., I.M.S., have been appointed Honorary Physicians to the King in succession to Cols. C. A. Wood, M.C., and R. Sweet, D.S.O., I.M.S. (ret.), respectively.

Cols. (temp.) J. T. McOuat and T. Menzies, R.A.M.C., have been appointed O.B.E. (Military Division) in recognition of gallant and distinguished services in North Africa.

Col. (acting) M. MacEwan, O.B.E., D.F.C., T.D., R.A.M.C., has been awarded the D.S.O. in recognition of gallant and distinguished services in North Africa.

Capt. (temp. Major) M. E. M. Herford, M.B.E., and Capts. B. E. W. Aldwell, J. S. Martin, and J. Miedema, R.A.M.C., have been awarded the M.C. in recognition of gallant and distinguished services in Sicily.

Capt. Christopher St. Johnston, R.A.M.C., was, in September, appointed surgeon to the Commander-in-Chief, India (Gen. Auchinleck), and is now on his personal staff in New Delhi.

Information has been received that Capts. L. V. Macdonald and G. H. A. Simmons, R.A.M.C., who have been prisoners of war, are now in Allied hands.

The following have been mentioned in dispatches in recognition of gallant and distinguished services in North Africa: Brig. (local) J. M. Weddell, Reserve of Officers, late R.A.M.C.; Brig. (local) E. R. Boland, O.B.E.; Cols. (temp.) J. H. Bayley, M.C., F. J. Hallinin; Col. (temp.) G. K. Maurice, D.S.O., M.C., Reserve of Officers; Majors (temp. Lieut.-Cols.) J. C. Alexander, T.D., H. D. Chalke, and S. Heatley; Capt. (temp. Major) (acting Lieut.-Col.) S. S. Chesser; Capt. (temp. Major) F. W. Bunting, R.A.M.C.

Jemadar Siddiq Ahmed, I.M.S., has been awarded the M.C. in recognition of gallant and distinguished services in the field.

CASUALTIES IN THE MEDICAL SERVICES

Missing.—Surg. Lieut.-Cmdr. H. de L. N. Davis, R.N.V.R.; Capt. Archibald McLellan, R.A.M.C.

Killed by Accident in New Guinea.—Capt. N. V. McKenna, A.A.M.C.

Prisoners of war.—War Subs. Major J. R. Macdonald; Acting Major P. E. F. Routley, R.A.M.C.

Previously reported missing, now reported killed in action.—Major A. G. Porter, R.A.M.C.

Correction.—The name of Major R. L. Mackay, M.C., R.A.M.C., is incorrectly given among the Repatriated Medical Officers on Nov. 13, p. 627. The correct name is Major R. Mackay, R.A.M.C.

DEATHS IN THE SERVICES

We announced on Nov. 13 the death on active service of Major K. C. Eden, F.R.C.S., R.A.M.C. The Consulting Surgeon of the 8th Army writes: The sad death of Kenneth Eden on Oct. 20 from poliomyelitis robbed the 8th Army of its neurological surgeon. From just after El Alamein he had travelled with his unit through the long desert, into Tripolitania, into Tunisia, into Sicily, into Italy. Because of the paucity of these neurological units, his team was split up into two, the advanced section going to whichever C.C.S. drained the whole fighting line, the other section staying with the most advanced general hospital. Thus patients had their early operation by skilled specialized hands and were passed on to another team devoted to their special care, to be retained for a suitable period. In Africa Eden himself moved into the forward section and gave without stint to the neurologically wounded 8th Army man what he deserved—the best of skill and attention. In the British Army he thus had an unrivalled experience of forward neurological surgery. Eden saw Naples and died; many 8th Army men "saw Eden and lived."

Universities and Colleges

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

THIRD M.B., B.S.—[1 2 4] Patricia M. Lloyd, [1 3] Josephine M. Lord, [1 2 3 4 5] G. MacGregor, [1 2 3] J. R. Trounce, R. F. Alexander, B. B. Alhadeff, Janet F. Atkins, D. C. Beatty, W. C. H. Bell, G. Belyavin, W. E. J. Bennett, Kathleen N. Berger, T. Bliss, D. H. Broughton, W. St. J. Buckler, R. R. Burn, Joyce M. Burt, R. J. Cairns, F. B. Charatan, S. L. Citron, Jean M. Connan, M. Conway, Lorna Cooke, J. G. Coxon, Doris A. Craigmile, K. D. Crow, A. G. Davies, F. Denny, Elizabeth B. C. Dickson, M. C. H. Dodgson, P. Dransfield, A. G. Ellerker, D. H. L. Evans, R. H. J. Fanthorpe, A. P. Fletcher, Joan M. L. Gabb, S. Gee, T. J. B. Geffen, C. H. Goine, K. L. G. Goldsmith, K. M. Gough, D. B. Griffiths, T. Hanley, J. A. Hanraty, J. Hart, Sheila Haslop, B. H. G. Hayward, I. D. Henderson, G. R. F. Hilson, Geraldine M. Howard, Sheila M. Howarth, J. G. Hunt, J. K. Irving, Ida I. A. Jackson, R. F. Jennison, H. B. Kelly, G. Krafft, P. G. Large, I. L. M. Larkin, Ninian Lewis, Una G. Lister, T. H. McCall, N. G. McGuire, E. M. Mackay-Scollay, W. Mackenzie, J. R. M. Miller, R. D. Millward, A. J. Moon, H. C. Moore, I. F. K. Muir, J. Mutch, D. H. D. Paine, Audrey Palmer, Diana G. Paradise, P. R. P. Pearsall, M. G. Philpott, S. Pickford, R. Pilsworth, Betty J. Poland, C. A. Pragnell, Denise A. Pullen, T. A. Quilliam, F. I. Rackow, D. A. C. Reid, J. A. Riddle, Dorothy M. Ridout, J. A. Robertson, Joan M. Rochford, R. H. Russell, Elizabeth R. Rutherfoord, W. H. Smith, P. Solnik, V. H. Springett, R. J. M. Steven, F. G. Strong, G. E. Sutcliffe, P. G. Swann, Bettie P. Thurlow, M. Trosser, Judith M. Waterlow, J. S. Watson, G. F. Wigglesworth, P. R. E. Williams, R. E. Wirgman, J. Zimmermann.

[1] With Honours. [2] Distinguished in Pathology. [3] Distinguished in Medicine. [4] Distinguished in Surgery. [5] University Medal.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At an ordinary meeting of the Council held on Nov. 11, with Sir Alfred Webb-Johnson, President, in the chair, the Gilbert Blane Medal was presented by the Medical Director-General of the Royal Navy, Surg. Vice-Admiral Sir Sheldon Dudley, to Surg. Comdr. D. P. Gurd, R.N., in the presence of the Council of the College and the President of the Royal College of Physicians.

The following were re-elected Members of the Court of Examiners for a year as from Dec. 9, 1943: Messrs. V. Zachary Cope, C. E. Shattock, E. W. Riches, and W. H. C. Romanis.

Mr. J. Leigh Collis was elected a Hunterian Professor for 1944. The Council approved its Memorandum of Evidence to be given before the Teviot Committee.

Diplomas of Membership were granted to the candidates whose names appear in a report of the meeting of the Royal College of Physicians of London in the *Journal* of Nov. 6 (p. 593), and to Dorothy Willoughby and D. E. R. Kelsey.

Diplomas were granted, jointly with the Royal College of Physicians of London, as follows:

DIPLOMA IN PUBLIC HEALTH.—Phyllis M. Button, Kathleen Fost, Margaret E. Meyrick, H. A. Nathan, Lucy M. Sutcliffe.

SOCIETY OF APOTHECARIES OF LONDON

At a quarterly meeting of the Court held on Oct. 26, with Sir Stanley Woodwark, Master, presiding, Dr. J. P. Hedley was reappointed as the Society's representative on the General Medical Council.

The following candidates have satisfied the examiners in the subjects indicated:

PATHOLOGY, BACTERIOLOGY, AND FORENSIC MEDICINE.—A. M. Benson, P. D. Bryant, A. E. Bernstein, D. A. Cox, T. C. McGilmore, G. R. S. Jackson, M. W. Johnston, J. M. Macdonald, J. J. Maskell, J. Middleton, J. C. F. Poole, N. Sachse, J. H. S. Scarlett, C. R. P. Sheen, J. C. Stephens, M. N. Tata, J. Walker, J. K. Wilson, H. M. Wolff.

SURGERY.—A. M. Benson, P. L. Brangwin, R. J. N. Hodges, R. J. C. Hutchinson, J. C. F. Poole, A. M. Rajah, N. Sachse, R. N. Theakston, W. M. Thomas, J. K. Wilson.

MEDICINE.—P. D. Bryant, T. Y. Martin, J. Middleton, J. C. F. Poole, N. Sachse, J. H. S. Scarlett, M. N. Tata, R. N. Theakston, J. M. Thomas, J. K. Wilson.

MIDWIFERY.—S. R. Abrams, A. E. Bernstein, P. L. Brangwin, K. R. J. Coates, T. H. Eustace, E. A. Humphrey, H. R. Mohammed, T. Moss, J. C. F. Poole, N. Sachse, J. K. Sugden, J. K. Wilson, A. M. Wolff.

The Diploma of the Society was granted to G. R. S. Jackson, J. M. Macdonald, J. C. F. Poole, A. M. Rajah, N. Sachse, J. H. S. Scarlett, M. N. Tata, R. N. Theakston, W. M. Thomas, J. K. Wilson.

Medical Notes in Parliament

Ingredients of Packed Foodstuffs

In the House of Commons on Nov. 9 Mr. MABANE stated that a White Paper had been issued explaining the regulations which had been made to enable the Minister of Food to protect the consumer against false and misleading claims of the nutritive quality of foodstuffs. Sections 6 and 8 of the Food and Drugs Act, 1938, and Section 9 of the Sale of Food (Weights and Measures) Act, 1926, were reproduced in the new regulations. The only additional power not previously approved by the House was contained in Regulation 2. This gave power to restrict "the making on advertisements of food of claims or suggestions or the presence in the food of vitamins or minerals." It was unfortunate that a small minority of manufacturers should have been tempted to exploit the national nutritional policy. Reputable food manufacturers, no less than scientists and members of the medical profession, recognized the harm that was being done by misleading advertisements of this nature. It was with the object of bringing them to an end that the new powers had been taken by Order in Council. The enforcement of any specific Orders which might be issued under these powers would be entrusted to local authorities, but they would require, unless it was otherwise provided, to obtain the Minister's consent before proceedings were taken. This would ensure that proceedings were taken against the manufacturer responsible for the false description and not against a large number of retailers through whom the product reached the public.

According to the White Paper it is the intention that in general pre-packed articles of food shall bear a label indicating the name and address of the packer, the common or usual name (if any) of the food, the minimum quantity of food contained in the package, and the common or usual names (but not proportions) of the ingredients. Provision will be made for relaxing these requirements in appropriate cases, and the disclosure of ingredients will not be necessary in the case of foods for which a standard is prescribed under the Regulations. In this way the public will be fully protected as to the quantity of food they are buying or its quality, either by the existence of a standard or by the disclosure of its ingredients. When it is claimed that foods contain vitamins and minerals the label must in future bear a quantitative disclosure of these active ingredients.

Tuberculosis

Mr. AMMON on Nov. 10 opened a debate on tuberculosis. He referred to the rise in incidence since 1938 and desired an indication on post-war planning in regard to housing and medical services so that men should not return from the front to conditions conducive to this disease. There must be an early searching out of cases likely to develop active tuberculosis. Radiography sets could be taken to the factories instead of managements sending workers to distant points. Something could be done by care and training in habits which would restrict the infection. The time had come to draw the line between recoverable cases and those which would not recover, but allowances should be provided for all.

Sir HENRY MORRIS-JONES thought that the black-out had aggravated tuberculosis. In the greater proportion of buildings in this country there was no ventilation during the black-out. Dr. EDITH SUMMERSKILL said that to give allowances only to those patients who were considered curable was contrary to the principles and practice of the medical profession. Sir LAMBERT WARD stated that up to a few weeks ago 17 mass radiography sets had been issued. What were these among 42,000,000 people? Mr. SLOAN contended that hospital accommodation of tuberculosis patients should be part of the general hospital scheme. Colonel H. GUEST asked how voluntary hospitals treating tuberculosis were to associate with State hospitals and hospitals maintained by the rates. Voluntary hospitals were able to carry out research and go in for the high-class surgery which was called for in tuberculosis. The trouble was to know where to send patients when they had undergone the surgical treatment. Mr. MATHERS told of letters from nurses who had contracted this disease in their nursing service and were declared ineligible for any allowance. Apparently there was no compensation for them at all.

Mr. WESTWOOD, replying for the Government, said it was now possible to discover whether a person was liable to contract the disease and possibly to save him from contracting it. The mass radiography was a start. Three sets were to be provided in Scotland. They would be placed in Glasgow, in Edinburgh, and in the county of Lanark. There was difficulty in getting these sets in the midst of war. The shortage of domestic staffs and trained nurses had to be faced. The tuberculosis scheme rested on the recommendations of the Committee on Tuberculosis in Wartime, appointed by the Medical Research Council, at the Government's request, in the autumn of 1941. That committee recommended the controlled use of radiography, and also special financial assistance to induce patients to accept early treatment. This was an experimental scheme and there would have to be adjustments. The scheme provided relief for patients with pulmonary tuberculosis, and its main purpose was to rehabilitate those who could be rehabilitated. The scheme allowed considerable latitude. It had benefited three out of four cases in Scotland where applications had been made. He hoped incurable or chronic cases would come within the general social security scheme which would apply to those suffering from all diseases.

Precautions against Epidemics

Major LYONS on Nov. 11 inquired what steps had been or were being taken in consultation with the Dominions and Colonies and with the United States of America to ensure that machinery was available to come into complete operation to cope immediately with any world-wide epidemic at the instant of occurrence. Mr. ERNEST BROWN said arrangements for the exchange of epidemiological information were in operation between this country, the Dominions and Colonies, the United States of America, and Allied and neutral countries. The International Sanitary Conventions governing quarantine and other precautions were still being observed by all these countries. Their working had been adapted to wartime conditions and advances in preventive medicine. The risks of epidemics in liberated countries and in the immediate post-war period were among the matters which would receive closest attention from the United Nations Relief and Rehabilitation Administration.

Diphtheria Immunization.—Mr. VIANT inquired on Nov. 4 the meaning of the Ministry's advertisements in the Press and on the hoardings that immunization protected against diphtheria in view of the statement in the last report of his Department that it had never been claimed that immunization gave complete protection to the individual child. Mr. ERNEST BROWN replied that there was no inconsistency between the advertisement and the report. The latter showed that in 1942 the rate of incidence of diphtheria among immunized children was one-fourth or one-fifth of that among those not immunized, and that the unimmunized child was from twenty to thirty times as liable to die from diphtheria as the immunized child.

Tuberculosis in Nurses.—Mr. MESSER inquired on Nov. 11 whether any machinery had been established to obtain statistics showing the incidence of tuberculosis among the nursing staffs of tuberculosis sanatoria separate from those in general hospitals in England and Wales. Mr. BROWN said no such machinery had been established, but he desired to obtain reliable statistical information on the point. He was consulting his Medical Advisory Committee and his Standing Advisory Committee on Tuberculosis as to the scope and form of the inquiries which ought to be made to attain the object.

Notes in Brief

A gas-and-air apparatus has been supplied to every Emergency Maternity Home where a request has been made by the local authority administering the home, and where the staff included a midwife holding the special certificate for the administration of a gas-and-air analgesia.

During the Committee Stage of the Parliament (Elections and Meeting) Bill on Nov. 3 Mr. Peakes for the Government accepted a new clause to permit the appointment of proxies for Service voters at university elections.

The Wage-earners Income Tax Bill passed through Committee of the House of Commons on Oct. 20. Resisting a proposal to extend the "pay as you earn" provisions to salaries above £600 a year Sir John Anderson said he was in favour of extending these at the proper time. He wanted to feel sure he did nothing unfair to professional men assessed under Schedule D. Later Sir John promised to reconsider the scope of the Bill at a later stage.

The Agricultural Research Council has found sufficient herds to start field experiments with B.C.G. vaccine for control of bovine tuberculosis. The test must last over five or six years, of which the present year is the first.

Medical News

Owing to the absence of many members on war service the activities of the School Medical Group of the Society of Medical Officers of Health have been suspended for some time past. A meeting has now been called for Friday, Dec. 3, at 2.45 p.m., to be held at the Guildhall, Market Place, Derby, for the election of officers and for a discussion on "The Future of the School Medical Service." The president of the society, Dr. R. H. H. Jolly, will take the chair, and all Fellows and members are invited to attend. Those who hope to be present are asked to notify Dr. A. A. E. Newth at 28, Chaucer Street, Nottingham.

At the meeting of the Medical Society for the Study of Venereal Diseases to be held at 11, Chandos Street, Cavendish Square, W., to-day (Saturday, Nov. 27, at 2.30 p.m.) a discussion on "Is a 'New Deal' in Venereal Disease Control Necessary?" will be opened by Dr. I. N. Orpwood Price and Dr. J. A. Burgess. No meeting will be held in December. On Jan. 29 a discussion on "Intensive Arsenotherapy" will be opened by Lieut.-Col. D. M. Pillsbury, Capt. C. J. Courville, and Capt. G. R. Wise, U.S. Army.

The first of a series of clinical and pathological demonstrations will be given in the Royal Salop Infirmary on Dec. 3, at 3.15 p.m., when the subject will be "Disorders of the Blood." The first part will consist of a demonstration of laboratory methods in the diagnosis and control of blood disorders, and the second of a demonstration of cases of the commoner blood disorders. Other meetings will follow, when it is hoped to deal with heart, respiratory, and renal diseases, diseases of the nervous system, and, if possible, skin diseases.

The Central Council for Health Education, which is charged by the Ministry of Health with providing material and lectures for instruction of the public in health matters, urgently needs part-time lecturers. They should be medical men and women who, in their spare time, can give technical instruction simply and in an interesting way to lay audiences. A fee of £1 1s. is paid for each lecture in addition to third-class travelling and certain out-of-pocket expenses. Further information and enrolment form may be obtained from Dr. Robert Sutherland, Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

The Secretary of State for the Colonies has appointed a committee, under the chairmanship of Lord Rushcliffe, to examine the question of training, both in this country and over-seas, for nurses who are to serve in Colonial territories, and to make recommendations having regard also to the need in those territories for increased public health activities and for the fostering and development of community welfare. The medical members of the committee are: Dr. Mary Blacklock, Dr. W. H. Kauntze, Dr. H. M. C. Macaulay, Dr. H. A. Moody, and Dr. A. G. H. Smart, Medical Adviser to the Secretary of State.

Sir Walter Womersley, Minister of Pensions, and Mr. G. Tomlinson, M.P., Parliamentary Secretary to the Minister of Labour and National Service, recently attended a lecture-demonstration at Leeds to further the plans of the two Ministries for equipping and training limbless persons to enable them to return to industry and to live a life of normal activity. Describing the plans of his Ministry to rehabilitate the limbless, Sir Walter emphasized that the scheme did not affect their pension rights. Dr. R. D. L. Kelham (from Roehampton Hospital) described the great advance that had been made in the training and equipment of the limbless.

The William Osler Medal of the American Association of the History of Medicine has been awarded to George Edward Murphy of the School of Medicine of the University of Pennsylvania for his essay entitled "The Evolution of our Knowledge of Rheumatic Fever." The essay will be published in the *Bulletin of the History of Medicine*.

Christmas cards and calendars will not be so plentiful this year, but the Grenfell Association has a selection available which it is selling as usual in aid of the children of Labrador. There are boxes containing six cards and envelopes at 1s. 6d. and 1s. 9d. and single cards with envelopes at 6d. each, also useful pocket calendars at 3d. Samples will be supplied if postage is sent to the Grenfell Association at 66, Victoria Street, London, S.W.1, or to 21, Bothwell Street, Glasgow, C.2. All who buy will have the double satisfaction of securing cards which, for wartime, are very moderately priced and of helping a good cause.

The National Association for the Prevention of Tuberculosis has produced a short sound film about mass radiography. This film will be useful for showing to office and factory staffs, managers, shop stewards, and others before mass radiography examinations are to be made. An advance view of the procedure should help them to form a correct idea of what mass radiography is, and will disarm criticisms from management and workers. It should also ease the complicated procedure of passing the subject in and out of the *x*-ray room, and thus save time. The film is available in 16-mm. and 35-mm. size (non-flam) and lasts for 12 minutes. Apply to Dr. Harley Williams, N.A.P.T., Tavistock House North, Tavistock Square, London, W.C.1. The N.A.P.T. cinema unit is available for the showing of health programmes, including the mass radiography film, as engagements permit.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there were rises in the incidence of acute pneumonia 100, diphtheria 68, and whooping-cough 62, but those of scarlet fever, dysentery, and measles fell by 249, 102, and 32 respectively. The only important local variation in the trend of scarlet fever was a fall of 70 cases in Middlesex. The largest of the local increases in diphtheria was in Yorks West Riding—40. Lancashire showed the biggest rise in acute pneumonia, 43. On account of an outbreak in Birmingham C.B. notifications of whooping-cough in Warwickshire rose by 33. A steep fall occurred in the notifications of dysentery from 248 to 146; during the preceding nine weeks an average of 259 cases had been recorded. In Bedfordshire, which last week had 30 cases, 16 new cases were reported, and 7 from Dorsetshire (last week 36). The incidence in London remained at a high level: 43 cases were reported compared with 53 in the previous week. Other centres of infection were Middlesex 17 and Surrey 14.

In *Scotland* notifications of dysentery rose by 90 cases, of acute pneumonia by 48, diphtheria by 13, and whooping-cough by 11. Kincardine County reported 25 cases of dysentery, and in Edinburgh the incidence of this disease rose from 29 to 85; a small rise also occurred in Glasgow from 8 to 16. In the latter city cases of pneumonia rose by 30.

In *Eire* scabies—because of its prevalance—has been added to the list of notifiable diseases. In the city of Cork 2,549 persons have been treated in the corporation's clinic since the end of March. 1,076 were adults and 1,473 children.

The Week Ending November 13

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 3,236, whooping-cough 1,902, diphtheria 819, measles 557, acute pneumonia 781, cerebrospinal fever 41, dysentery 158, paratyphoid 4, typhoid 5.

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INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Nov. 6.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures o Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1943 (a)	(b)	(c)	(d)	(e)	1942 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	44	4	27	3	4	65	3	30	1	—
Deaths		1	2				—	1		
Diphtheria	770	41	179	117	40	881	43	259	93	16
Deaths	12	1	5	—	1	16	1	2	5	—
Dysentery	146	43	156	—	4	142	14	53	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	4	—	1	1	—	2	—	2	—	—
Deaths		—					—			
Erysipelas			60	6	2			58	8	4
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				29					30	
Deaths	44	10	14	12	3	57	5	10	20	4
Measles	553	46	62	29	2	7,384	—	379	10	44
Deaths	—	—	—	—	—	10	5	—	—	—
Ophthalmia neonatorum	85	8	17	—	1	76	2	18	—	—
Deaths										
Paratyphoid fever	4	—	—	—	1	6	—	—	—	
Deaths	—	—	—		—	1	—	—		—
Pneumonia, influenzal*	676	32	29	2	1	543	24	9	—	5
Deaths (from influenza)	31	4	20	1	1	19	3	8	—	—
Pneumonia, primary			306	21				148	6	
Deaths		30		13	13		—		8	7
Polio-encephalitis, acute	—	—				1	—			
Deaths		—					—			
Poliomyelitis, acute	11	—	1	2	—	18	1	4	18	—
Deaths		1					—			
Puerperal fever		2	26		—		3	11		—
Deaths		—					—			
Puerperal pyrexia†	142	7	14	1	2	140	10	15	6	1
Deaths										
Relapsing ever	—	—			—	—	—			—
Deaths										
Scarlet fever	3,374	237	407	61	111	2,736	163	453	55	47
Deaths	1	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—		—	—	—	1		1
Deaths				—	—				—	—
Typhoid fever	4	—	2	10	—	6	—	1	11	3
Deaths	—	—	—	—	—	1	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough	1,755	108	216	16	29	965	72	39	33	11
Deaths	7	—	3	—	—	7	1	—	3	—
Deaths (0–1 year)	318	41	63	35	22	324	33	60	32	30
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,171	611	630	204	135	4,219	603	57	181	133
Annual death rate (per 1,000 persons living)			14·2	13·4	‡			13·0	12·1	‡
Live births	5,675	717	839	336	263	5,572	650	876	309	249
Annual rate per 1,000 persons living			17·1	22·1	‡			18·1	20·6	‡
Stillbirths	189	22	42			202	23	31		
Rate per 1,000 total births (including stillborn)			48					34		

* Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

† Includes puerperal fever for England and Wales and Eire.

‡ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1.

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TELEGRAPHIC ADDRESSES.—EDITOR, *Aitiology Westcent, London*; SECRETARY, *Mediocra Westcent, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Heat in the Treatment of Shock

Q.—*What is the current teaching on the use of heat for shock? I have been in the habit of telling my first-aid classes that restoring heat to the shocked person is of first importance. I am now told that modern work is showing that the application of heat may even be dangerous. I should therefore like to know the present position with regard to heat in the first-aid treatment of shock and in the treatment of shock in a resuscitation ward.*

A.—The shocked patient is usually cold and, under war conditions, may often be suffering from the effects of exposure. It was formerly regarded as of first importance to apply heat rapidly and vigorously. Modern considerations have led to some well-founded criticism of this line of treatment.

In a normal human subject the application of heat accelerates the circulation, the increase taking place almost entirely through the skin and muscles. It used to be claimed that the improvement in pulse volume following the application of heat in shock was an indication of the benefit achieved. It is understandable that, as the skin of the arms and hands shares in the improvement of the *superficial* circulation, this observation does not necessarily indicate any change for the better in circulation through vital organs. The shocked patient is suffering from a depletion of the circulating blood volume. It is estimated that when the blood vessels of the skin are dilated by the application of heat, as much as 500 c.cm. of blood may be diverted into this part of the vascular system. When the blood flow through the vital organs is already imperilled by shock, it would appear to be harmful to increase the skin circulation at their expense. Furthermore, the increased heat leads to an increased tissue demand for oxygen, which may create further difficulties in the presence of a depleted circulation. Blalock and Mason in a long series of experiments in dogs produced a standard degree of shock by bleeding and other methods. It was found that the survival time of these animals was considerably prolonged by cooling, while overheating accelerated death.

It would be unwise at the moment to transfer these results unmodified to the human subject and to recommend cooling as a line of treatment. Clinical observations do, however, suggest that *over*-heating is definitely harmful and should be avoided. If the patient complains of cold he should be given enough cover and warmth for comfort, but overheating should be regarded as undesirable. In the absence of any shivering or other discomfort from cold, it is unlikely that cold does much harm.

"Alarming Effects" of Choline Derivatives

Q.—*In the interesting and chastening article, "Some Therapeutic Fallacies," by Drs. Linnell and Thomson, in the* JOURNAL *of Nov. 6, the authors, in discussing the treatment of paroxysmal tachycardia, say of acetyl-beta-methylcholine chloride that "its effects in other ways may be alarming." What are these alarming effects, and to what extent do they militate against the use of the choline derivatives—also how should they be counteracted?*

A.—The alarming effects which may be caused are (1) syncope due to sudden great fall in blood pressure, (2) a sense of substernal oppression or even pain, (3) asthma, especially in an allergic subject, (4) vomiting, (5) diarrhoea or even involuntary defaecation; (6) arrest of the heart has also been described. Atropine in full dosage is an effective antidote and should be kept in readiness in every case in which the drug or an allied choline compound is administered. These drugs should not be used in known allergic subjects, and, if an attack of asthma should be caused, adrenaline chloride should be immediately injected. It may be added that choline compounds should never be given intravenously or with the patient sitting up; and it is always wise to have a bed-pan at hand so that the patient need not raise himself to defaecate.

Spondylitis

Q.—*A patient aged about 30 has been treated since March with wide-field x rays for spondylitis. A radiograph of the lumbar and pelvic areas now shows arrested spondylitis with some decalcification, osteo-arthritis of thoraco-lumbar vertebrae, fusion of 4th and 5th lumbar vertebrae, sacro-ileitis, and osteo-arthritis of the left hip-joint. The patient has not experienced any relief. What is the best treatment?*

A.—It is difficult to see how *x* rays can demonstrate "arrested" spondylitis if decalcification is present and the patient has not experienced any relief; it rather suggests wishful thinking. The sedimentation rate would furnish more reliable information. In my experience wide-field *x*-ray therapy has not proved of value in established ankylosing spondylitis and has sometimes been responsible for serious constitutional disturbance; this does not apply to localized deep therapy over a small area at a time. It follows therefore that a second course is not advised. A period of rest in bed with fresh air, heliotherapy or ultra-violet irradiation, cod-liver oil to raise the general resistance, and the wearing subsequently of a well-fitted spinal brace of the Goldthwait or Taylor pattern when work is resumed, is likely to be the most beneficial line of treatment.

Transmission of the Blood Group

Q.—*Does the blood of a newly born baby exhibit the characteristics of one of the blood groups? If not, when do they develop? Are they inherited, and do they follow known Mendelian laws?*

A.—Yes. The agglutinogens have been detected as early as the 37th day of foetal life. The reaction at birth is, however, relatively weak and increases in strength during childhood. The agglutinins of the serum are not formed till after birth; any then present are derived from the mother. The blood group to which a person belongs is entirely determined by heredity. The mode of inheritance is thoroughly understood. As regards the ordinary blood groups, O, A, B, AB, these are determined by which pair of genes is received from the parents. A person receiving two O genes belongs to Group O (universal donors); a person receiving either two A genes or one A and one O belongs to Group A; a person receiving either two B genes or one B and one O to Group B; a person receiving one A gene and one B gene belongs to Group AB. It is now known that not all A genes are the same. A1 produces a strong reaction, A2 a weaker reaction, and A3 a still weaker reaction. A1 and A2 are both common, A3 very rare. The MN series involves quite different agglutinogens. Except in extremely rare instances the corresponding agglutinins do not occur in human serum; they have to be produced by inoculation of rabbits with human red cells. There is only one pair of genes. A person who receives two M genes belongs to Group M; a person who receives two N genes to Group N; the recipient of one M and one N gene belongs to Group MN. The Rh factor which has aroused so much interest in connexion with erythroblastosis foetalis (icterus gravis neonatorum) depends upon a gene pair, Rhrh. Persons receiving two Rh genes or one of each are Rh-positive; persons receiving two rh genes are Rh-negative. The great majority of the babies suffering from the condition are Rhrh, the Rh gene being derived from the father. Their Rh factor may excite the production of the antibody in their rhrh mothers, so producing the reaction. Altogether nothing in human genetics is better understood than the transmission of the blood group, and it is a story to which further chapters are likely to be added.

Gwathmey's Obstetric Anaesthesia

Q.—*Will you please give me the technical details of obstetric anaesthesia according to Dr. Gwathmey.*

A.—Gwathmey believes that a combination of drugs, each used for a specific purpose, produces more than an additive effect, each one enhancing the action of the other (synergism). He originally stated that hypodermic injections of magnesium sulphate potentiated the action of small amounts of other analgesic drugs given simultaneously, but he now appears to have abandoned this claim. It is doubtful if the mag. sulph. ever served any useful purpose in the dosage he used. His present technique is as follows: The rectum is washed out with a 5 to 10% sodium bicarbonate solution. When the pains become severe the patient is given nembutal gr. 3. When the effect of this initial dose of nembutal begins to wear off the following mixture is run into the rectum: Ether ʒ 2½; quinine alkaloid gr. 20; alcohol ♏ 45; paraldehyde ʒ 2; olive oil ad ʒ 4. This may be repeated after an interval of 2½ hours, though this is not often required. The quinine is not given more than twice. If in the meanwhile further sedation or analgesia is necessary she is given further doses of nembutal gr. 1½ when required, and if the pains are strong morphine gr. 1/6 is given with this second dose of nembutal, though it is omitted if delivery is expected within 4 hours. Throughout labour the degree of the patient's suffering rather than the amount of cervical dilatation is the guide to additional doses of nembutal. At the actual delivery nitrous oxide or ether may be used, but not chloroform.

Polyuria

Q.—*What is the cause of polyuria and frequency arising in a healthy man of 44? Frequency during the day, every 2 to 3 hours; no difficulty, no pain or any other symptoms of disorder: S.G. of day urine 1000, pale, no albumin or sugar. Occasional single disturbance at night; urine dark, high S.G., onset fairly sudden last 2 to 3 months. No apparent disease in any organ, general health excellent, no cardiovascular disease, B.P. 125/80. No thirst, appetite normal.*

A.—The degree of polyuria is not stated, and the highest specific gravity of the specimens of urine is not given. If the specific gravity of any one specimen is over 1020 then polyuria is not due to diminished renal function, and if there is a high specific gravity in any specimen, then diabetes insipidus is probably not present. The symptom of polyuria without thirst and with normal appetite suggests that it can only be slight in degree. If the 24-hour volume is less than 1,800 c.cm. the condition is probably frequency without polyuria, and it will be necessary to exclude infection of the urinary tract by microscopical and bacteriological examination of the deposit from a centrifuged specimen of urine. It is assumed that a rectal examination has been made. Other factors which may be considered are alterations in physical or mental habits, diet, or environment. Frequency of micturition is sometimes a symptom associated with anxiety states.

Voluntary Sterilization and the Law

Q.—*A woman says to me, "Doctor, I want to be sterilized." Can I do it in the absence of obstetrical indications, or is it illegal?*

A.—The sterilization of a woman apart from therapeutic indication is nowhere forbidden by statute law. The Offences against the Person Act, 1861, which was intended to be a complete code of this part of the criminal law, does not mention it. At that date, however, surgical sterilization was not a practical possibility. If a doctor were prosecuted for such an act, the prosecution would therefore have to allege a breach of the common law. This has never yet been done. Judges occasionally create new common-law offences, or, rather, declare for the first time that the act charged is and would always have been an offence. The common law is a body of principles rather than a code, and new ways of offending against those principles may be developed from time to time. It is therefore always open to a judge to rule that a doctor has committed an offence against the common law by rendering (without good medical reason) a woman permanently incapable of bearing a child, for to do so is an injury to the State. Professional ethics has always insisted that medical skill should be confined to medical indications and not directed by social, eugenic, or economic considerations, still less by those of personal convenience. A doctor who disregards his professional code need not be surprised if he soon conflicts with the law. If the sterilizing process was intended to be temporary and could be easily undone, the offence (if it is an offence) would presumably be mitigated. In brief, sterilization without good medical reason is probably illegal, and the doctor would be well advised to leave it alone.

Sulphonamides for "Rheumatism"

Q.—*Are there any records of the sulphonamides being used in cases of rheumatoid arthritis and fibrositis, and are they likely to be of use in the infective forms?*

A.—Response to sulphonamide treatment is determined not by the nature of a disease but by the identity of the micro-organism responsible. In so far as the conditions named may be caused by either the haemolytic streptococcus or the gonococcus, a good effect may be expected; otherwise probably not. In the great majority of cases an infective origin is incapable of real proof, though it may be suspected; antibacterial treatment is therefore empirical, and has certainly had no consistent success. It has also to be remembered that sulphonamide treatment is generally less effective in chronic infections and those involving less vascular structures than in acute.

Dermatomyositis

Q.—*I have a man of 58 under my care at present who has been suffering from dermatomyositis for six months. The left arm and hand are chiefly affected, with typical swelling of the fingers and filling up of the palm, marked limitation of movements, and commencing atrophy of the forearm muscles. He now complains of the chest and right arm, with acute tenderness of the skin and muscles on pressure. Before consulting me a month ago he had had all known treatments for neuritis, arthritis, etc., including gold, vitamin B_1 (both orally and parenterally), and all forms of physiotherapy, including short-wave, without any relief of pain. A combination of thiosinamine and thyroid aggravated the condition, and codeine gr. 1/2 gives no benefit. All forms of heat treatment make the pain worse.*

A.—There have been no important advances in the treatment of this chronic condition. One American author suggests that sulphanilamide may be helpful, but owing to wartime difficulties the writer has been unable to trace the paper. It is assumed that the diagnosis of dermatomyositis is correct, though the question does not give a very convincing description of the disease. Attempts have been made to demonstrate a relationship between dermatomyositis, myasthenia gravis, and thyrotoxicosis, but even if a connexion exists it does not suggest any line of treatment. From the practical point of view this disease remains obscure, very rare, and of unknown aetiology. There is no specific therapy, and the only thing to do is to push analgesics until relief of pain is achieved.

Haldane's Haemoglobinometer and CO

Q.—*We have a Haldane haemoglobinometer in the sick bay; but there is no coal gas laid on. Is there any way we can use this instrument without carbon monoxide? Would a solution of coal gas in distilled water serve the purpose? Is there a large error in the reading if the estimation is carried out without passing coal gas through it?*

A.—There is no way of using the Haldane haemoglobinometer without carbon monoxide that is really satisfactory. Carbon monoxide cylinders can be obtained from British Oxygen Company, East Lane, Wembley, Middx., at a price of £2 13s. 6d. per cylinder (17 cu. ft.), and refills can be obtained at a price of £1 6s. 6d. If a fine-adjustment needle is fixed to the cylinder the result is extremely satisfactory. This arrangement is used extensively in the present surveys that are being made of haemoglobin levels. An alternative is to make your own carbon monoxide as described in Peters, J. P., and Van Slyke, D. D., *Quantitative Clinical Chemistry Methods*. 1932, **2**, 342.

Undescended Testes with Infantile Genitals

Q.—*A boy 10 years of age, of a bright appearance and normal intelligence, shows one marked abnormality—namely, under-development of the external generative organs and non-descent of the testes. The genitals appear like those of an infant and the testes are palpable neither in the scrotum nor along the inguinal canal. There is no tendency to obesity.*

A.—This is probably a case of selective failure of the anterior pituitary gonadotrophic function. The correct treatment is the intramuscular injection of chorionic gonadotrophin, 500 rat units twice weekly in alternate months. The prognosis should be somewhat guarded, but there is a high probability that the treatment will be successful.

Breast Lymph and Cancer

Q.—*What difference is there, if any, between the lymph in a normal breast and the lymph in a breast with early cancer?*

A.—Stasis of lymph is regarded by some as an important precursor of cancer. I cannot recall a demonstration that lymph in a breast with early cancer differs in quality from the lymph in a normal breast.

INCOME TAX

Appointment: Expenses

"N. J." held an appointment in North London and took a house there. He now holds another E.M.S. appointment south of the Thames. Can he claim an allowance for the following expenses: (*a*) travelling from his home to the hospital where he works, (*b*) cost of telephone, which is necessitated by liability to be called out in air raids as casualty officer, (*c*) cost of books for M.R.C.P. study, and (*d*) cost of domestic servant in view of his wife's whole-time work under the Ministry of Labour.

*** (*a*) Under the Finance Act, 1942, Sec. 26, an allowance can be claimed up to a maximum of £10 a year if the change in the place of work is (as presumably it is) connected with the present war. (*b*) Only a proportion according to use, so far as there is a direct connexion with a *paid* appointment. (*c*) No—the cost is one of a capital nature. (*d*) No—the old case of Bowers *v.* Harding is conclusive on this point.

Proportion of General Expenses

"Y. Z." occupies a large house and garden, which has been attached to the practice for 120 years. Recently the inspector of taxes has refused to continue the allowance for part of the cost of a gardener and claims to reduce the amount allowed for keep of a locumtenent and of a maid employed in the work of the practice. What action should be taken?

*** This is one of those questions which depend so much on the facts of the particular case that it is difficult to offer any advice in general terms. The broad principle followed is that the whole expense of the premises should be divided in the ratio in which the premises are in fact used for private or professional purposes. On that basis the claim to an allowance for part of the gardener's wages is weak—it would in strictness probably be confined to the part

spent on keeping the approach to the consulting room in reasonably decent order. As regards the cost of maid's keep, that should be capable of estimation on the basis that it is a fraction of the total cost of the whole establishment. Failing agreement with the inspector of taxes "Y. Z." has the right of appeal either to the local Commissioners of Income Tax or to the Special Commissioners, whose office is in London but who hear appeals locally when "on circuit."

Amount of Tax Payable

F. S.—The facts are sufficiently indicated below:

*** Total income:

	£ s. d.	£ s. d.
Dividends	540 0 0	
Property	52 0 0	
		592 0 0
Personal Allowance		140 0 0
Taxable Income		£452 0 0
Tax at 6s. 6d. on £165		53 12 6
„ 10s. „ £287		143 10 0
	£452	£197 2 6

If the total income were £500 only the amount of tax payable would be as follows:

Total Income		500 0 0
Personal Allowance	140 0 0	
"Old Age Relief" (one-tenth)	50 0 0	
		190 0 0
		£310 0 0
Tax at 6s. 6d. on £165	53 12 6	
„ 10s. „ £145	72 10 0	
		£126 2 6
	£310	
The alternative liability is therefore		126 2 6
plus three-quarters of (£592 – £500 =) £92		69 0 0
		£195 2 6

As this is less than the £197 2s. 6d. calculated in the ordinary way, £195 2s. 6d. is the true liability.

Allowance for Premiums under Pension Scheme

C. H. inquires why an allowance for premiums paid under a pension insurance scheme is given at the rate of 5s. only, and not at the rate of 7s. 6d., where the total income is between £1,000 and £2,000.

*** The higher rate applies to *compulsory* payments for deferred annuities to widows, etc.—e.g., where the payment is required by statute or as a condition of employment. Where the payment is made by virtue of a contract the appropriate rate is 5s. (Income Tax Act, 1918, Section 32 (3) (E) as amended).

LETTERS, NOTES, ETC.

Film of First-aid Post during Raids

Drs. L. ARTHUR N. LINE and W. G. ARTHUR (Birmingham) write: A film for the instruction of new or "directed" personnel has been made for the use of the Birmingham casualty services at the first-aid post of which we are in charge. This shows the administration and working of a post during raids, and gives an idea of what is expected of the staff in dealing with typical casualties, and follows the description of such work published by one of us in the *Journal* (Feb. 7, 1942, p. 193). The film runs for about 35 minutes, and though it is "silent" a careful commentary has been written to be spoken when it is shown. While it is by no means perfect and has the limitations of its small-scale production, it is practical and "common-sense" and seems to serve its purpose. As such a film takes many hours of time and trouble to produce we are mentioning it here so that, should other first-aid medical officers outside this area feel the need for such a method of instruction for their posts, further copies may be made for this purpose.

Stilboestrol for Cancer

Dr. WILLIAM MACEWEN (Glasgow) writes: I am much interested in recent letters appearing in the *Journal* regarding the use of stilboestrol in carcinoma of the prostate, and I should like to know whether stilboestrol has been used in the treatment of carcinoma of the stomach or of the intestinal tract, and, if so, with what results. Perhaps some of your readers may be able to give information on this matter.

Strychnine for Paralysis

Dr. T. BLANCHARD SELLORS (Berkhamsted) writes: The letter of Dr. J. C. Jones (Oct. 23, p. 534) reminds me that during my tenure of office as R.M.O., St. Mary's Hospital for Children, Plaistow, 1899 and 1900, diphtheria was terribly rife in West Ham and paralyses were frequently admitted. Twelve cases of respiratory paralysis—all accompanied by pareses of legs and palate, some of arm, larynx, posterior cervical, facial, or other muscles in addition —formed the subject-matter of a paper never sent for publication. This has been unearthed and a summary is here appended. An average of the cases shows that a child of 5½ tolerated 1/30 gr. strychnine hydrochlor. hypodermically every four hours for 17 days before exhibiting signs of overdose. The only fatal case began to twitch on the second day and indeed was past hope on admittance. One boy of 4, very extensively paralysed, tolerated 1/50 gr. every 4 hours for 27 days. Improvement was rapid in most cases and recovery well on the way before reduction of the dose was necessary. I have no notes of those cases without diaphragmatic palsy, but remember that the good effects of strychnine in these encouraged me to try heavy dosage in severe affections. Such energetic treatment could only be carried out in a hospital under skilled nursing and observation. Absolute rest (a calico band *behind* the back with loops for the shoulder to ensure recumbrance, nasal feeding, etc.) was essential. Whether massive dosage from the start or Dr. Jones's graduation is employed matters little so long as the child is quickly brought under the influence of the drug.

Mycotic Nails

Mr. L. N. REECE, F.R.C.S. (Brixham, S. Devon) writes: I was horrified to read under "Any Questions?" (*Journal*, Aug. 14, p. 221) the suggested drastic procedures for the cure of this condition, and hasten to advise experiment with a line of treatment which I have been trying out on the cases which have come my way in the past few years. All G.P.s are familiar with the intractable bluish swellings of the nail folds which go on for months or years and discharge and become painful at times, but not all have realized that it is due to a fungus infection. I have made use of the affinity of the aniline dyes for this fungus, and so far have used a 20% watery solution of brilliant green. A weaker solution might be equally effective, and crystal violet would do equally well. My present technique is as follows: In every case of this infection it will be found that the cuticle is to some extent separated from the nail, and on exploring with the eye of a large needle a pocket is found. This pocket is the seat of the infection, and the purpose of treatment is to sterilize it. The eye of the needle is loaded with the solution, and the pocket is flooded and gently rubbed inside over its whole extent. The separation of the cuticle is increased as much as possible without discomfort, to give easy access. If the painting is done gently there should be no more discomfort than a little smarting. If desired, the stained nail fold may be concealed with a small strip of elastoplast. Once the dye has dried, the hands may be washed as usual. After three days the patient returns for a second treatment, when a great improvement will be seen. Almost all pain and swelling will have gone. Painting of the pockets is carried out as before, re-separating the cuticle where it is already tending to adhere once more. After this the patient attends at weekly intervals for a few weeks and any doubtful spots are repainted. Cure is recognized when there is no swelling, the colour is normal, and the cuticle is normally adherent. This treatment is equally effective in those cases of invasion by fungus under the free edge of the nail. So far, in a small series of cases, including one of at least ten years' duration, there have been no failures or complications.

Abdominal Viscera in Thorax of Newborn Infant

Dr. J. B. FRUMIN (Blaenavon, Glam) writes: On June 16 the local midwife reported to me that a normal baby which she had delivered at 11 p.m. the previous night had been found dead 7 hours later. I visited the house and the mother said that she had not slept all night; at 2 a.m. she imagined the baby was cold, but was not unduly alarmed; at 6 a.m. she realized the baby was dead. The midwife told me that the baby had cried lustily and appeared quite normal. At the coroner's request I performed a post-mortem, and found that the abdominal viscera, with the exception of the liver and last portion of the large bowel, were packed in the left side of the thoracic cavity. As I have no idea how rare this abnormality is, I report the post-mortem findings in case they may be of interest. The body was that of a male infant about 8 lb. in weight. Face cyanosed, well formed, no external abnormalities. On opening the thorax: left side of thorax was occupied by the stomach, spleen, all the small intestine, most of the large bowel, all enclosed in peritoneal sac; right side of thorax had the heart and lungs. The heart had two well-developed ventricles, but I could find only one large dilated auricle, with no trace of a septum. Right lung expanded; left lung unexpanded and very small. The abdomen contained only the liver, which seemed very large, and the distal end of the large bowel passed straight down from the diaphragm to the rectum. Both kidneys were in normal position.

Correction

In the article on "Employment of the Tuberculous in Industry in the U.S.S.R." (Nov. 20, p. 652), the fourth and fifth lines of the second paragraph should have read, "the People's Commissariat for Health and the Central Council of Trades Unions (which are responsible . . ."